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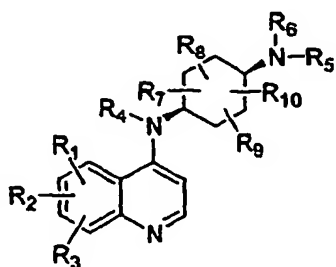
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(54) Title: ANTAGONIST OF MELANIN CONCENTRATING HORMONE AND THEIR USES



(I)

(57) Abstract: The present invention relates to the antagonism of the effects of melanin-concentrating hormone (MCH) through the melanin concentrating hormone receptor which is useful for the prevention or treatment of eating disorders, weight gain, obesity, abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping, arousal, anxiety, depression, seizures, neurodegeneration and psychiatric disorders. The present invention is directed to the compounds of formula (I).

ANTAGONIST OF MELANIN CONCENTRATING HORMONE AND THEIR USES

Technical Field

The present invention relates to the antagonism of the effects of melanin-concentrating hormone (MCH) through the melanin concentrating hormone receptor which is useful for the prevention or treatment of eating disorders, weight gain, obesity, abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping, arousal, anxiety, depression, seizures, neurodegeneration and psychiatric disorders.

Background of the Invention

Obesity is a major cause and contributor to health problems such as type II diabetes, coronary heart disease, increased incidence of certain forms of cancer, and respiratory complications. It is a disease that is increasing at an alarming rate due to increased availability of high-fat diets, genetic susceptibility, and a more sedentary way of life in modern society. Obesity can be defined as weight gain resulting from a mismatch of energy intake and energy expenditure. Food intake and energy metabolism are regulated, in part, by the interaction of neuropeptides and their receptors. Recently, the role that the hormone leptin plays in controlling appetite has been elucidated.

Leptin is a peptide hormone produced by fat cells, regulating both food intake and metabolism by acting on leptin receptors in the hypothalamus. Increased fat stores leads to increased secretion of leptin, resulting in a signal to the hypothalamus to decrease food intake, whereas decreases in adiposity result in lower leptin levels and a stimulation of food intake. Melanin-concentrating hormone (MCH) has been identified as an orexigenic peptide that counterbalances the activity of leptin.

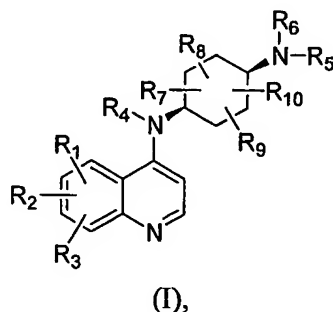
MCH is a cyclic 19 amino acid neuropeptide expressed in the zona incerta and lateral hypothalamus in response to both energy restriction and leptin deficiency. MCH is known to stimulate feeding when injected into the lateral ventricle of rats and the mRNA for MCH is upregulated in the hypothalamus of genetically obese mice (ob/ob) and in fasted control and ob/ob animals. Mice lacking MCH are hypophagic and lean with increased metabolic rate, whereas animals over-expressing MCH gain excess weight on both standard and high fat diets. MCH is thought to have effects on other nervous system functions as well (Nahon JL., The melanin-concentrating hormone: from the peptide to the gene. Crit Rev Neurobiol 8:221-

262, 1994). An orphan G-protein coupled receptor (GPCR) was recently identified as a receptor for MCH.

Although there exists current pharmacologic therapies used to treat obesity, none of the current therapies achieve the U.S. Food and Drug Administration criteria for benefit measured by a 5% difference in mean weight loss, as weight loss efficacy is diminished by reduction of patient adherence to pharmacological therapy due to side effects of the drugs. Some of the side effects associated with current therapies include increased heart rate and blood pressure, and uncontrolled excretion of fat in stools. Thus, there exists a medical need for agents capable of preventing or treating eating disorders, weight gain and obesity, that at the same time, have improved efficacy and safety.

Summary of the Invention

The present invention is directed to compounds of formula (I):



or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-Y-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of hydrogen, alkyl, aryl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biaryl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, $R_E R_F N$ -, $R_E R_F N C(O)$ -, $R_G S$ - and $R_G O$ -;

R_E and R_F are each independently a member selected from the group consisting of

hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-;

R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl and heterocycle;

Y is a member selected from the group consisting of -C(O)-, -S-, -S(O)- and -S(O)₂-, or is absent;

R₆ is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R₇, R₈, R₉, and R₁₀ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R₇ and R₈ taken together with the carbon atom that they are attached form oxo;

with the following provisos P₁-P₄:

P₁ if Y is absent, m is 0 and if A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene,

then B is a member selected from the group consisting of hydrogen, alkyl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, R_ER_FN-, R_ER_FNC(O)-, R_GS- and R_GO-; or

P₂ if Y is -C(O)-, m is 0 and A is absent,

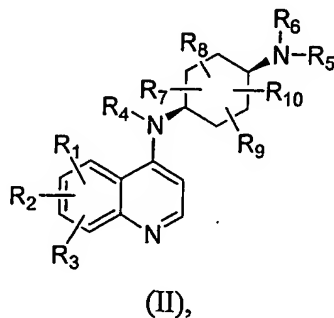
then B is a member selected from the group consisting of hydrogen, alkyl, arylalkenyl, aryloxyalkyl, cycloalkyl, heterocycle, haloalkyl, and R_ER_FNC(O)-; or

P₃ if Y is -C(O)-, A is absent and B is aryl or heterocycle,
then m is 1-6; or

P₄ if Y is -C(O)- and B is a member selected from the group consisting of arylC(O)-, arylS(O)₂-, heterocycleC(O)-, heterocycleS(O)₂-,

then A is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene.

The present invention also provides a method of treating disorders mediated by MCH through the MCH receptor comprising administering a therapeutically effective amount of a compound of formula (II),



or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-Y-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of hydrogen, alkyl, aryl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biaryl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, $R_E R_F N$ -, $R_E R_F N C(O)$ -, $R_G S$ - and $R_G O$ -;

R_E and R_F are each independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-;

R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl and heterocycle;

Y is a member selected from the group consisting of $-C(O)$ -, $-S$ -, $-S(O)$ - and $-S(O)_2$ -, or is absent;

R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R_7 , R_8 , R_9 , and R_{10} are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8 taken together with the carbon atom that they are attached form oxo.

In particular, one such disorder mediated by MCH through the MCH receptor is obesity. Other disorders that are mediated by MCH through the MCH receptor are abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration or psychiatric disorders. Therefore the compounds of the present invention are useful in treating disorder such as obesity, abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration or psychiatric disorders. Accordingly, the present invention provides a method for treating obesity, abnormalities in

reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration and psychiatric disorders comprising administering a therapeutically effective amount of a compound of formula (II).

According to another embodiment, the present invention is directed to a pharmaceutical composition comprising a therapeutically effective amount of a compound of formula (II) in combination with a pharmaceutically suitable carrier.

Detailed Description of the Invention

Definitions

As used throughout this specification and the appended claims, the following terms have the following meanings:

The term "alkoxy," as used herein, refers to an alkyl group, as defined herein, appended to the parent molecular moiety through an oxygen atom. Representative examples of alkoxy include, but are not limited to, methoxy, ethoxy, propoxy, 2-propoxy, butoxy, tert-butoxy, pentyloxy, and hexyloxy.

The term "alkoxyalkylene," as used herein, refers to an alkoxy group, as defined herein, appended to the parent molecular moiety through an alkylene atom, as defined herein. Representative examples of alkoxyalkylene include, but are not limited to, methoxypropyl, methoxybutyl, ethoxypropyl, ethoxypentyl, propoxybutyl and propoxypentyl.

The term "alkyl," as used herein, refers to a straight or branched chain hydrocarbon containing from 1 to 10 carbon atoms. Representative examples of alkyl include, but are not limited to, methyl, ethyl, n-propyl, iso-propyl, n-butyl, sec-butyl, iso-butyl, tert-butyl, n-pentyl, isopentyl, neopentyl, n-hexyl, 3-methylhexyl, 2,2-dimethylpentyl, 2,3-dimethylpentyl, n-heptyl, n-octyl, n-nonyl, and n-decyl.

The term "alkylcarbonyl," as used herein, refers to an alkyl group, as defined herein, appended to the parent molecular moiety through a carbonyl group, as defined herein. Representative examples of alkylcarbonyl include, but are not limited to, acetyl, 1-oxopropyl, 2,2-dimethyl-1-oxopropyl, 1-oxobutyl, and 1-oxopentyl.

The term "alkylene," denotes a divalent group derived from a straight or branched chain hydrocarbon of from 1 to 10 carbon atoms. Representative examples of alkylene include, but are not limited to, -CH₂-, -CH₂CH₂-, -CH₂CH₂CH₂-, -CH₂CH₂CH₂CH₂-, and -CH₂CH(CH₃)CH₂-.

The term "alkylsulfonyl," as used herein, refers to an alkyl group, as defined herein, appended to the parent molecular moiety through a sulfonyl group, as defined herein. Representative examples of alkylsulfonyl include, but are not limited to, methylsulfonyl and ethylsulfonyl.

The term "aryl," as used herein, refers to a monocyclic-ring system, or a bicyclic- or a tricyclic- fused ring system wherein one or more of the fused rings are aromatic.

Representative examples of aryl include, but are not limited to, anthracenyl, azulenyl, fluorenyl, indanyl, indenyl, naphthyl, phenyl, and tetrahydronaphthyl.

The aryl groups of this invention can be substituted with 0, 1, 2, or 3 substituents independently a member selected from alkenyl, alkoxy, alkoxycarbonyl, alkyl, alkylcarbonyl, alkylcarbonyloxy, alkynyl, aryloxy, arylalkenyl, carboxy, carboxyalkyl, cyano, cyanoalkyl, formyl, halogen, haloalkyl, heterocycle, hydroxy, hydroxyalkylene, nitro, -NR_AR_B, aryl and heterocycle, wherein aryl of said aryloxy, said aryl and said heterocycle can each be substituted with 0, 1, 2, or 3 substituents selected from the group consisting of alkenyl, alkoxy, alkoxycarbonyl, alkyl, alkylcarbonyl, carboxy, carboxyalkyl, cyano, cyanoalkyl, halogen, haloalkyl, hydroxy, hydroxyalkyl and nitro.

The term "arylalkyl," as used herein, refers to an aryl group, as defined herein, appended to the parent molecular moiety through an alkyl group, as defined herein. Representative examples of arylalkyl include, but are not limited to, benzyl, 2-phenylethyl, 3-phenylpropyl, and 2-naphth-2-ylethyl.

The term "arylalkenyl" as used herein, refers to an aryl group, as defined herein, appended to the parent molecular moiety through an alkenyl group, as defined herein. Representative examples of arylalkenyl include, but are not limited to, prop-1-enylbenzene, 1-(prop-1-enyl)naphthalene and the like.

The term "arylcarbonyl," as used herein, refers to an aryl group, as defined herein, appended to the parent molecular moiety through a carbonyl group, as defined herein. Representative examples of arylcarbonyl include, but are not limited to, benzoyl and naphthoyl.

The term "arylcarbonylalkyl" as used herein, refers to an arylcarbonyl group, as defined herein, appended to the parent molecular moiety through a carbonyl group, as defined herein. Representative examples of arylcarbonylalkyl include, but are not limited to, propiophenone, 1-(1-naphthyl)propan-1-one and the like.

The term "aryloxy," as used herein, refers to an aryl group, as defined herein, appended to the parent molecular moiety through an oxygen atom. Representative examples of aryloxy include, but are not limited to, phenoxy, naphthyloxy, 3-bromophenoxy, 4-chlorophenoxy, 4-methylphenoxy, and 3,5-dimethoxyphenoxy.

The term "aryloxyalkyl," as used herein, refers to an aryloxy group, as defined herein, appended to the parent molecular moiety through an alkyl group, as defined herein. Representative examples of aryloxyalkyl include, but are not limited to, 2-phenoxyethyl, 3-naphth-2-yloxypropyl and 3-bromophenoxymethyl.

The term "arylsulfonyl" as used herein, refers to an aryl group, as defined herein,

appended to the parent molecular moiety through a sulfonyl group, as defined herein.

Representative examples of arylsulfonyl include but are not limited to (ethylsulfonyl)benzene, 1-(ethylsulfonyl)naphthalene and the like.

The term "biarylalkyl" as used herein, refers to two aryl groups, as defined herein, appended to the parent molecular moiety through an alkyl group, as defined herein. Representative examples of biarylalkyl include but are not limited to (1-phenylbutyl)benzene and the like.

The term "carbonyl," as used herein, refers to a -C(O)- group.

The term "cycloalkyl," as used herein, refers to a monocyclic, bicyclic, or tricyclic ring system. Monocyclic ring systems are exemplified by a saturated cyclic hydrocarbon group containing from 3 to 8 carbon atoms. Examples of monocyclic ring systems include cyclopropyl, cyclobutyl, cyclopentyl, cyclohexyl, cycloheptyl, and cyclooctyl. Bicyclic ring systems are exemplified by a bridged monocyclic ring system in which two non-adjacent carbon atoms of the monocyclic ring are linked by an alkylene bridge of between one and three additional carbon atoms. Representative examples of bicyclic ring systems include, but are not limited to, bicyclo(3.1.1)heptane, bicyclo(2.2.1)heptane, bicyclo(2.2.2)octane, bicyclo(3.2.2)nonane, bicyclo(3.3.1)nonane, and bicyclo(4.2.1)nonane. Tricyclic ring systems are exemplified by a bicyclic ring system in which two non-adjacent carbon atoms of the bicyclic ring are linked by a bond or an alkylene bridge of between one and three carbon atoms. Representative examples of tricyclic-ring systems include, but are not limited to, tricyclo(3.3.1.0^{3,7})nonane and tricyclo(3.3.1.1^{3,7})decane (adamantane).

The cycloalkyl groups of this invention can be substituted with 0, 1, 2, or 3 substituents independently a member selected from alkenyl, alkoxy, alkoxycarbonyl, alkyl, alkylcarbonyl, alkylcarbonyloxy, alkynyl, aryl, aryloxy, arylalkenyl, carboxy, carboxyalkyl, cyano, cyanoalkyl, formyl, halogen, haloalkyl, heterocycle, hydroxy, hydroxyalkyl, nitro and -NR_AR_B wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen, alkyl, alkylcarbonyl and alkylformyl

The term "halo" or "halogen," as used herein, refers to -Cl, -Br, -I or -F.

The term "haloalkoxy," as used herein, refers to at least one halogen, as defined herein, appended to the parent molecular moiety through an alkoxy group, as defined herein. Representative examples of haloalkoxy include, but are not limited to, chloromethoxy, 2-fluoroethoxy, trifluoromethoxy, and pentafluoroethoxy.

The term "haloalkyl," as used herein, refers to at least one halogen, as defined herein, appended to the parent molecular moiety through an alkyl group, as defined herein. Representative examples of haloalkyl include, but are not limited to, chloromethyl, 2-fluoroethyl, trifluoromethyl, pentafluoroethyl, and 2-chloro-3-fluoropentyl.

The term "heterocycle" or "heterocyclic," as used herein, refers to a monocyclic,

bicyclic, or tricyclic ring system. Monocyclic ring systems are exemplified by any 3- or 4-membered ring containing a heteroatom independently a member selected from oxygen, nitrogen and sulfur; or a 5-, 6- or 7-membered ring containing one, two or three heteroatoms wherein the heteroatoms are independently a member selected from nitrogen, oxygen and sulfur. The 5-membered ring has from 0-2 double bonds and the 6- and 7-membered ring have from 0-3 double bonds. Representative examples of monocyclic ring systems include, but are not limited to, azetidiny, azepanyl, aziridiny, diazepiny, 1,3-dioxolany, dioxany, dithianyl, furyl, imidazolyl, imidazoliny, imidazolidiny, isothiazolyl, isothiazoliny, isothiazolidiny, isoxazolyl, isoxazoliny, isoxazolidiny, morpholiny, oxadiazolyl, oxadiazoliny, oxadiazolidiny, oxazolyl, oxazoliny, oxazolidiny, piperaziny, piperidiny, pyranyl, pyraziny, pyrazolyl, pyrazoliny, pyrazolidiny, pyridiny, pyrimidiny, pyridaziny, pyrrolyl, pyrroliny, pyrrolidiny, tetrahydrofurany, tetrahydrothienyl, tetraziny, tetrazolyl, thiadiazolyl, thiadiazoliny, thiadiazolidiny, thiazolyl, thiazoliny, thiazolidiny, thienyl, thiomorpholiny, 1,1-dioxidothiomorpholiny (thiomorpholine sulfone), thiopyranyl, triaziny, triazolyl, and trithianyl. Bicyclic ring systems are exemplified by any of the above monocyclic ring systems fused to an aryl group as defined herein, a cycloalkyl group as defined herein, or another monocyclic ring system. Representative examples of bicyclic ring systems include but are not limited to, for example, benzimidazolyl, benzodioxiny, benzothiazolyl, benzothienyl, benzotriazolyl, benzoxazolyl, benzofurany, benzopyranyl, benzothiopyranyl, cinnoliny, indazolyl, indolyl, 2,3-dihydroindolyl, indoliziny, naphthyridiny, isobenzofurany, isobenzothienyl, isoindolyl, isoquinoliny, phthalaziny, 4H-pyrido(1,2-a)pyrimidin-4-one, pyranopyridiny, quinoliny, quinoliziny, quinoxaliny, quinazoliny, tetrahydroisoquinoliny, tetrahydroquinoliny, and thiopyranopyridiny. Tricyclic rings systems are exemplified by any of the above bicyclic ring systems fused to an aryl group as defined herein, a cycloalkyl group as defined herein, or a monocyclic ring system. Representative examples of tricyclic ring systems include, but are not limited to, acridiny, carbazolyl, carboliny, dibenzo(b,d)furany, dibenzo(b,d)thienyl, naphtho(2,3-b)furan, naphtho(2,3-b)thienyl, phenaziny, phenothiaziny, phenoxaziny, thianthrenyl, thioxanthenyl and xanthenyl.

The heterocycles of this invention can be substituted with 0, 1, 2, or 3 substituents independently a member selected from alkenyl, alkoxy, alkoxycarbonyl, alkyl, alkylcarbonyl, alkylcarbonyloxy, alkynyl, aryl, aryloxy, arylalkenyl, carboxy, carboxyalkyl, cyano, cyanoalkyl, formyl, halogen, haloalkyl, heterocycle, hydroxy, hydroxyalkyl, nitro and -NR_AR_B, wherein aryl of said aryloxy, aryl of said arylalkenyl, said aryl and said heterocycle can be substituted with 0, 1, 2, or 3 substituents selected from the group consisting of alkenyl, alkoxy, alkoxycarbonyl, alkyl, alkylcarbonyl, carboxy, carboxyalkyl, cyano, cyanoalkyl, halogen, haloalkyl, hydroxy, hydroxyalkyl and nitro.

The term "heterocyclealkyl," as used herein, refers to a heterocycle, as defined herein, appended to the parent molecular moiety through an alkyl group, as defined herein. Representative examples of heterocyclealkyl include, but are not limited to, pyridin-3-ylmethyl and 2-pyrimidin-2-ylpropyl.

The term "hydroxy," as used herein, refers to an -OH group.

The term "hydroxyalkylene," as used herein, refers to a hydroxy group, as defined herein, appended to the parent molecular moiety through an alkylene group, as defined herein. Representative examples of hydroxyalkylene include, but are not limited to, hydroxybutyl, hydroxypentyl and hydroxyhexyl.

The term "oxo," as used herein, refers to a =O moiety.

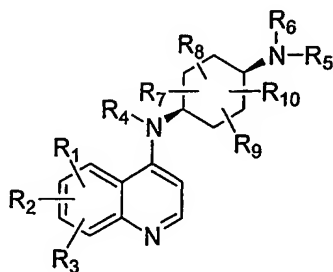
The term "sulfonyl," as used herein, refers to a -SO₂- group.

The present invention is directed to compounds of formula (I), wherein R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀, R_A, R_B, R_C, R_D, R_E, R_F, A, B, Y and m are defined herein.

The present invention is also directed to a method of treating disorders mediated by MCH through the MCH receptor.

As antagonists of MCH action upon the MCH receptor, therefore, the compounds of the present invention are useful in treating disorders that are mediated by MCH through the MCH receptor. Disorders that are mediated by MCH through the MCH receptor are obesity, abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration or psychiatric disorders. Therefore the compounds of the present invention are useful in treating obesity, abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration or psychiatric disorders.

In the principal embodiment of the present invention there is provided a method of treating disorders mediated by MCH through the MCH receptor comprising administration of a therapeutically effective amount of a compound of formula (I),



(I),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-Y-A-B$;

m is 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of hydrogen, alkyl, aryl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biaryl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, $R_E R_F N$ -, $R_E R_F NC(O)$ -, $R_G S$ - and $R_G O$ -;

R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-;

R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl and heterocycle;

Y is a member selected from the group consisting of $-C(O)$ -, $-S$ -, $-S(O)$ - and $-S(O)_2$ -, or is absent;

R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R_7 , R_8 , R_9 , and R_{10} are independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8 taken together with the carbon atom that they are attached form oxo;

with the following provisos P_1 - P_4 :

P_1 if Y is absent, m is 0 and if A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene,

then B is a member selected from the group consisting of hydrogen, alkyl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, $R_E R_F N$ -, $R_E R_F NC(O)$ -, $R_G S$ - and $R_G O$ -; or

P_2 if Y is $-C(O)$ -, m is 0 and A is absent,

then B is a member selected from the group consisting of hydrogen, alkyl, arylalkenyl, aryloxyalkyl, cycloalkyl, heterocycle, haloalkyl, and $R_E R_F NC(O)$ -; or

P_3 if Y is $-C(O)$ -, A is absent and B is aryl or heterocycle,
then m is 1-6; or

P_4 if Y is $-C(O)$ - and B is a member selected from the group consisting of arylC(O)-,

arylS(O)₂-, heterocycleC(O)-, heterocycleS(O)₂-,

then A is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R₅ is B and wherein B is heterocycle; and R₁, R₂, R₃, R₄, R₆, R₇, R₈, R₉, R₁₀, R_A, R_B, R_C, R_D, A and m are as defined in formula (I), which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R₅ is -A-B, A is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is heterocycle; and R₁, R₂, R₃, R₄, R₆, R₇, R₈, R₉, R₁₀, R_A, R_B, R_C, R_D and m are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R₅ is -(CH₂)_m-C(O)-A-B, m is from 0-6, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is a member selected from the group consisting of hydrogen, alkyl, aryl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biaryl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, R_ER_FN-, R_ER_FNC(O)-, R_GS- and R_GO-, R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-; and R₁, R₂, R₃, R₄, R₆, R₇, R₈, R₉, R₁₀, R_A, R_B, R_C, R_D, R_G are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R₅ is -(CH₂)_m-C(O)-A-B, m is from 3-6, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is a member selected from the group consisting of hydrogen, alkyl, aryl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biaryl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, R_ER_FN-, R_ER_FNC(O)-, R_GS- and R_GO-, R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-; and R₁, R₂, R₃, R₄, R₆, R₇, R₈, R₉, R₁₀, R_A, R_B, R_C, R_D, R_G are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R₅ is -(CH₂)_m-C(O)-A-B, m is 0, A is absent, B is a member selected from the group consisting of aryl, arylalkenyl, aryloxyalkyl, biaryl and heterocycle; and R₁, R₂, R₃, R₄, R₆, R₇, R₈, R₉, R₁₀, R_A, R_B, R_C, R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is 0, A is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is a member selected from the group consisting of arylC(O)-, arylNC(O)-, arylS(O)₂-, heterocycleC(O)-, heterocycleNC(O)- and heterocycleS(O)₂-; and R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is from 1-6, A is absent, B is a member selected from the group consisting of aryl and heterocycle; and R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is from 3-6, A is absent, B is a member selected from the group consisting of aryl and heterocycle; and R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is 0, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is a member selected from the group consisting of aryl and heterocycle and R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is from 0-6, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is $R_E R_F N$ -, R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-; and R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, B is $R_E R_F N$ -, R_E is a member selected from the group consisting of alkylC(O)-, arylC(O)- and arylS(O)₂-, m is 0, A is alkylene; and R_1 , R_2 , R_3 , R_4 , R_5 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, B is $R_E R_F N$ -, R_E is a member selected from the group consisting of aryl, arylalkyl, heterocycle and heterocyclealkyl, m is 0,

A is absent; and $R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R_{10}, R_A, R_B, R_C, R_D$ are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is from 0-6, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is $R_E R_F NC(O)-$, R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-; and $R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R_{10}, R_A, R_B, R_C$ and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is from 3-6, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is $R_E R_F NC(O)-$, R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-; and $R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R_{10}, R_A, R_B, R_C$ and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is 0, A is alkylene, B is $R_E R_F NC(O)-$, R_E is a member selected from the group consisting of aryl, arylalkyl, heterocycle and heterocyclealkyl, and $R_1, R_2, R_3, R_4, R_5, R_6, R_7, R_8, R_9, R_{10}, R_A, R_B, R_C$ and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is from 0-6, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is a member selected from the group consisting of $R_G S-$ and $R_G O-$, R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl and heterocycle; and $R_1, R_2, R_3, R_4, R_6, R_7, R_8, R_9, R_{10}, R_A, R_B, R_C$ and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is from 3-6, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is a member selected from the group consisting of $R_G S-$ and $R_G O-$, R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl and heterocycle; and $R_1, R_2, R_3, R_4, R_6, R_7, R_8, R_9, R_{10}, R_A, R_B, R_C$ and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is 0, A is alkylene, B is a

member selected from the group consisting of R_GS- and R_GO- , R_G is a member selected from the group consisting of alkyl, aryl, arylalkyl, heterocycle and heterocyclealkyl; and R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-C(O)-A-B$, m is 0, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is a member selected from the group consisting of alkyl, cycloalkyl and haloalkyl; and R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-S(O)_2-A-B$, m is from 0-6, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is a member selected from the group consisting of alkyl, aryl, arylalkenyl, cycloalkyl and heterocycle; and R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

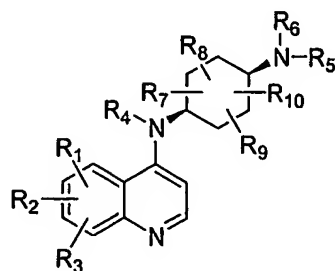
According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-S(O)_2-A-B$, m is from 3-6, A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene, B is a member selected from the group consisting of alkyl, aryl, arylalkenyl, cycloalkyl and heterocycle; and R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-S(O)_2-A-B$, m is 0, A is absent, B is a member selected from the group consisting of aryl and heterocycle; and R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-S(O)_2-A-B$, m is 0, A is alkylene, B is a member selected from the group consisting of aryl and heterocycle; and R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

According to a further embodiment of the present invention there is provided a compound of formula (I) wherein R_5 is $-(CH_2)_m-S(O)_2-A-B$, m is 0, A is alkylene, B is a member selected from the group consisting of alkyl and cycloalkyl; and R_1 , R_2 , R_3 , R_4 , R_6 , R_7 , R_8 , R_9 , R_{10} , R_A , R_B , R_C and R_D are as defined in formula (I) which is useful for the treatment of obesity.

The present invention provides a method of treating disorders mediated by MCH through the MCH receptor comprising administering a therapeutically effective amount of a compound of formula (II),



(II),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-Y-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of hydrogen, alkyl, aryl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biaryl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, $R_E R_F N$ -, $R_E R_F NC(O)$ -, $R_G S$ - and $R_G O$ -;

R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-;

R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl and heterocycle;

Y is a member selected from the group consisting of $-C(O)$ -, $-S$ -, $-S(O)$ - and $-S(O)_2$ -, or is absent;

R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R_7 , R_8 , R_9 , and R_{10} are independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8 taken together with the carbon atom that they are attached form oxo.

In particular, one such disorder mediated by MCH through the MCH receptor is obesity. Accordingly, the present invention provides a method for treating obesity comprising administering a therapeutically effective amount of a compound of formula (II).

Other disorder mediated by MCH through the MCH receptor are abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration and psychiatric disorders. Accordingly, the present invention provides a method for treating abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration and psychiatric disorders by inhibiting the effects of melanin concentrating hormone (MCH) through the melanin concentrating hormone receptor, comprising administering a therapeutically effective amount of a compound of formula (II).

According to another embodiment, the present invention is directed to a pharmaceutical composition comprising a therapeutically effective amount of a compound of formula (II) in combination with a pharmaceutically suitable carrier.

The present compounds can exist as therapeutically suitable salts. The term "therapeutically suitable salt," refers to salts or zwitterions of the compounds which are water or oil-soluble or dispersible, suitable for treatment of disorders without undue toxicity, irritation, and allergic response, commensurate with a reasonable benefit/risk ratio, and effective for their intended use. The salts can be prepared during the final isolation and purification of the compounds or separately by reacting an amino group of the compounds with a suitable acid. Representative salts include acetate, adipate, alginate, citrate, aspartate, benzoate, benzenesulfonate, bisulfate, butyrate, camphorate, camphorsulfonate, digluconate, glycerophosphate, hemisulfate, heptanoate, hexanoate, formate, isethionate, fumarate, lactate, maleate, methanesulfonate, naphthylenesulfonate, nicotinate, oxalate, pamoate, pectinate, persulfate, 3-phenylpropionate, picrate, oxalate, maleate, pivalate, propionate, succinate, tartrate, trichloroacetic, trifluoroacetic, glutamate, para-toluenesulfonate, undecanoate, hydrochloric, hydrobromic, sulfuric, phosphoric, and the like. The amino groups of the compounds can also be quaternized with alkyl chlorides, bromides, and iodides such as methyl, ethyl, propyl, isopropyl, butyl, lauryl, myristyl, stearyl, and the like.

Basic addition salts can be prepared during the final isolation and purification of the present compounds by reaction of a carboxyl group with a suitable base such as the hydroxide, carbonate, or bicarbonate of a metal cation such as lithium, sodium, potassium, calcium, magnesium, or aluminum, or an organic primary, secondary, or tertiary amine. Quaternary amine salts derived from methylamine, dimethylamine, trimethylamine, triethylamine, diethylamine, ethylamine, tributylamine, pyridine, N,N-dimethylaniline, N-

methylpiperidine, N-methylmorpholine, dicyclohexylamine, procaine, dibenzylamine, N,N-dibenzylphenethylamine, 1-phenamine, and N,N'-dibenzylethylenediamine, ethylenediamine, ethanolamine, diethanolamine, piperidine, piperazine, and the like, are contemplated as being within the scope of the present invention.

The present compounds can also exist as therapeutically suitable esters and prodrugs. The term "therapeutically suitable esters and prodrug," refers to those esters and prodrugs or zwitterions which are suitable for use in contact with the tissues of patients without undue toxicity, irritation, and allergic response, are commensurate with a reasonable benefit/risk ratio, and are effective for their intended use. The term "prodrug," refers to compounds which are rapidly transformed *in vivo* to the parent compounds of formula (I-II) for example, by hydrolysis in blood. The term "therapeutically suitable ester," refers to compounds which are rapidly transformed *in vivo* to the parent compounds of formula (I-II) for example, by hydrolysis in blood. The term "therapeutically suitable ester," refers to alkoxycarbonyl groups appended to the parent molecule on an available carbon atom. More specifically, a "therapeutically suitable ester," may exist on one or more available aryl, cycloalkyl and heterocycle group as defined herein.

Asymmetric centers can exist in the present compounds. Individual stereoisomers of the compounds are prepared by synthesis from chiral starting materials or by preparation of racemic mixtures and separation by conversion to a mixture of diastereomers followed by separation or recrystallization, chromatographic techniques, or direct separation of the enantiomers on chiral chromatographic columns. Starting materials of particular stereochemistry are either commercially available or are made by the methods described hereinbelow and resolved by techniques well-known in the art.

Geometric isomers can exist in the present compounds. The invention contemplates the various geometric isomers and mixtures thereof resulting from the disposal of substituents around a carbon-carbon double bond, a cycloalkyl group, or a heterocycloalkyl group. Substituents around a carbon-carbon double bond are designated as being of Z or E configuration and substituents around a cycloalkyl or heterocycloalkyl are designated as being of cis or trans configuration.

Therapeutic compositions of the present compounds comprise an effective amount of the same formulated with one or more therapeutically suitable excipients. The term "therapeutically suitable excipient," as used herein, represents a non-toxic, solid, semi-solid or liquid filler, diluent, encapsulating material, or formulation auxiliary of any type. Examples of therapeutically suitable excipients include sugars; cellulose and derivatives thereof; oils; glycols; solutions; buffering, coloring, releasing, coating, sweetening, flavoring, and perfuming agents; and the like. These therapeutic compositions can be administered parenterally, intracisternally, orally, rectally, or intraperitoneally.

Liquid dosage forms for oral administration of the present compounds comprise formulations of the same as emulsions, microemulsions, solutions, suspensions, syrups, and elixirs. In addition to the compounds, the liquid dosage forms can contain diluents and/or solubilizing or emulsifying agents. Besides inert diluents, the oral compositions can include wetting, emulsifying, sweetening, flavoring, and perfuming agents.

Injectable preparations of the present compounds comprise sterile, injectable, aqueous and oleaginous solutions, suspensions or emulsions, any of which can be optionally formulated with parenterally suitable diluents, dispersing, wetting, or suspending agents. These injectable preparations can be sterilized by filtration through a bacterial-retaining filter or formulated with sterilizing agents which dissolve or disperse in the injectable media.

Antagonism of the effects of MCH through the MCH receptor by the compounds of the present invention can be delayed by using a liquid suspension of crystalline or amorphous material with poor water solubility. The rate of absorption of the compounds depends upon their rate of dissolution which, in turn, depends on their crystallinity. Delayed absorption of a parenterally administered compound can be accomplished by dissolving or suspending the compound in oil. Injectable depot forms of the compounds can also be prepared by microencapsulating the same in biodegradable polymers. Depending upon the ratio of compound to polymer and the nature of the polymer employed, the rate of release can be controlled. Depot injectable formulations are also prepared by entrapping the compounds in liposomes or microemulsions which are compatible with body tissues.

Solid dosage forms for oral administration of the present compounds include capsules, tablets, pills, powders, and granules. In such forms, the compound is mixed with at least one inert, therapeutically suitable excipient such as a carrier, filler, extender, disintegrating agent, solution retarding agent, wetting agent, absorbent, or lubricant. With capsules, tablets, and pills, the excipient can also contain buffering agents. Suppositories for rectal administration can be prepared by mixing the compounds with a suitable non-irritating excipient which is solid at ordinary temperature but fluid in the rectum.

The present compounds can be micro-encapsulated with one or more of the excipients discussed previously. The solid dosage forms of tablets, dragees, capsules, pills, and granules can be prepared with coatings and shells such as enteric and release-controlling. In these forms, the compounds can be mixed with at least one inert diluent and can optionally comprise tableting lubricants and aids. Capsules can also optionally contain opacifying agents which delay release of the compounds in a desired part of the intestinal tract.

Transdermal patches have the added advantage of providing controlled delivery of the present compounds to the body. Such dosage forms are prepared by dissolving or dispensing the compounds in the proper medium. Absorption enhancers can also be used to increase the flux of the compounds across the skin, and the rate of absorption can be controlled by

providing a rate controlling membrane or by dispersing the compounds in a polymer matrix or gel.

Disorders caused or exacerbated by MCH are treated or prevented in a patient by administering to the patient, a therapeutically effective amount of compound of the present invention in such an amount and for such time as is necessary to achieve the desired result. The term "therapeutically effective amount," refers to a sufficient amount of a compound to effectively ameliorate disorders mediated by MCH, by antagonizing the effect of MCH through the MCH receptor at a reasonable benefit/risk ratio applicable to any medical treatment. The specific therapeutically effective dose level for any particular patient will depend upon a variety of factors including the disorder being treated and the severity of the disorder; the activity of the compound employed; the specific composition employed; the age, body weight, general health, sex, and diet of the patient; the time of administration, route of administration, rate of excretion; the duration of the treatment; and drugs used in combination or coincidental therapy.

The total daily dose of the present compounds in single or divided doses can be in amounts, for example, from 0.01 to 50 mg/kg body weight or more usually from 0.1 to 25 mg/kg body weight. In general, treatment regimens comprise administration to a patient in need of such treatment from about 10 mg to about 1000 mg of the compounds per day in single or multiple doses.

Specific compounds of formula (I) include, but are not limited to:

cis-N,N'-bis(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(4-chlorophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;

cis-N-(2,8-bis(trifluoromethyl)quinolin-4-yl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(8-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(7-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(2-methylquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(quinolin-3-ylmethyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(quinolin-4-ylmethyl)cyclohexane-1,4-diamine;

cis-N-(4-bromobenzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3,4-difluorobenzyl)cyclohexane-1,4-diamine;

cis-N-(3-bromobenzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-{4-(dimethylamino)-1-

naphthyl)methyl}cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(4-pyridin-2-ylbenzyl)cyclohexane-1,4-diamine;

cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-N-(7-chloroquinolin-4-yl)-N'-(2-phenylquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(6-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(6-methyl-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(6-fluoro-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(8-chloro-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-quinolin-4-ylcyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(5,7-dichloro-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-indole-6-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-(3,4-dichlorophenyl)methanesulfonamide;

cis-N-(7-chloroquinolin-4-yl)-N'-(1H-indol-6-ylmethyl)cyclohexane-1,4-diamine;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-(3,5-dichlorophenyl)methanesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-(methylthio)phenyl)urea;

cis-N-(2-chlorophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(2-(trifluoromethyl)phenyl)urea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-(trifluoromethyl)phenyl)urea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(4-(trifluoromethyl)phenyl)urea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(4-(trifluoromethoxy)phenyl)urea;

cis-N-1,3-benzodioxol-5-yl-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-((trifluoromethyl)thio)phenyl)urea;

cis-N-(3-bromophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;

cis-N-(4-bromophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3,4-dichlorophenyl)urea;

cis-N,N'-bis((4E)-7-chloro-1-methylquinolin-4(1H)-ylidene)cyclohexane-1,4-diamine;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(2,4-dichlorophenyl)urea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3,5-dichlorophenyl)urea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-1-naphthylurea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-2-naphthylurea;

cis-N-benzyl-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;

cis-N-(3-chlorophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylbenzamide;

cis-2-amino-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methoxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methoxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluorobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzamide;

cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;

cis-2-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;

cis-3-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;

cis-4-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-cyanobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(dimethylamino)benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-cyanobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(dimethylamino)benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethyl)benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethyl)benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,3-dimethylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-dimethylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethoxy)benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-dimethylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-dimethoxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-dimethoxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dimethoxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-benzodioxole-5-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4,5-trimethoxybenzamide;
cis-2,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-3,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-furamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-furamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethyl-3-furamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-3-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylthiophene-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-pyrrole-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dimethylbenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methylthiophene-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethyl-1H-pyrrole-3-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,2,5-trimethyl-1H-pyrrole-3-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-thiazole-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-methyl-1H-pyrrole-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-thiazole-4-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-thiazole-5-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}isoxazole-5-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methyl-3-phenylisoxazole-4-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}pyridine-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxypyridine-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxynicotinamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methylpyrazine-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-indole-3-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-8-methyl-4-oxo-4H-pyrido(1,2-a)pyrimidine-3-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methyl-1-phenyl-1H-pyrazole-4-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-oxo-4,5,6,7-tetrahydro-1-benzofuran-3-carboxamide;

cis-6-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2H-chromene-3-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-ethylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-4-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxy-4-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-4-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,3-difluorobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-difluorobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-difluorobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-difluorobenzamide;

cis-2-(N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}glycyl)benzaldehyde;

cis-4-acetyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methoxy-4-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-ethoxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(methylthio)benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-4-methoxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-naphthamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-naphthamide;

cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;

cis-2-(acetylamino)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;

cis-4-(acetylamino)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-isopropoxybenzamide;

cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluoro-1-naphthamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-diethoxybenzamide;

cis-2-benzyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(2-phenylethyl)benzamide;

cis-2-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methoxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-methylbenzoyl)benzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-iodobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-iodobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-iodobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-fluorophenyl)acetamide;

cis-di-3-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1-(4-

fluorophenyl)propan-1-one;

cis-5-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1-(4-fluorophenyl)pentan-1-one;

cis-N-(4,4-bis(4-fluorophenyl)butyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(4-phenylbutyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(5-phenylpentyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-difluorobenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-difluorophenyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3-fluorobenzyl)cyclohexane-1,4-diamine;

cis-N-(3-chlorobenzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(4-chlorobenzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3-(trifluoromethyl)benzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(4-(trifluoromethyl)benzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(4-phenoxybenzyl)cyclohexane-1,4-diamine;

cis-N-(4-(benzyloxy)benzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(2,4-dimethylbenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(2,5-dimethylbenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3,4-dimethylbenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-dimethylbenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-dimethoxybenzyl)cyclohexane-1,4-diamine;

cis-N-(1,3-benzodioxol-5-ylmethyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3,4,5-trimethoxybenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(2,3-dichlorobenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(2,4-dichlorobenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(2,5-dichlorobenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3,4-dichlorobenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-dichlorobenzyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-phenylcyclohexane-1,4-diamine;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}propane-1-sulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}butane-1-sulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzenesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(trifluoromethoxy)benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-fluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyanobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-cyanobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-cyanobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methoxybenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methoxybenzenesulfonamide;
cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-dimethylphenyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(2-fluorophenyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-fluorophenyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-2-naphthylcyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-fluoro-4-methylphenyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-1-naphthylcyclohexane-1,4-diamine;
cis-3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-4-(2-chloro-6-nitrophenoxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-difluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-difluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-propylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-isopropylbenzenesulfonamide;
cis-4-chloro-N-({5-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonyl}thien-2-yl)methylbenzamide;
cis-5-bromo-6-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}pyridine-3-sulfonamide;
cis-4-tert-butyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-

fluorobenzenesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)sulfonyl}phenyl}acetamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethoxybenzenesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-dimethoxybenzenesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethyl)benzenesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethyl)benzenesulfonamide;

cis-2,3-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

201 *cis*-2,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-2,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-3,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-3,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,1'-biphenyl-4-sulfonamide;

cis-2-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-3-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-4-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethoxy)benzenesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dimethylisoxazole-4-sulfonamide;

cis-(E)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-phenylethylsulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-vinylbenzenesulfonamide;

cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-sulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,1,3-benzoxadiazole-4-sulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-nitrobenzenesulfonamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-nitrobenzenesulfonamide;
cis-3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}quinoline-8-sulfonamide;
cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-dimethyl-1H-pyrazole-4-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,1,3-benzothiadiazole-4-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methyl-5-nitrobenzenesulfonamide;
cis-methyl 3-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonylthiophene-2-carboxylate;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(1,1-dimethylpropyl)benzenesulfonamide;
cis-4-butoxy-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-isoxazol-3-ylthiophene-2-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-((1S,4R)-7,7-dimethyl-2-oxobicyclo(2.2.1)hept-1-yl)methanesulfonamide;
cis-2,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-3-sulfonamide;
cis-4,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-sulfonamide;
cis-7-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,1,3-benzoxadiazole-4-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(methylsulfonyl)benzenesulfonamide;
cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-nitrobenzenesulfonamide;
cis-6-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3H-1λ⁴-imidazo(2,1-b)(1,3)thiazole-5-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(trifluoroacetyl)-1,2,3,4-tetrahydroisoquinoline-7-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2-methylbenzenesulfonamide;
cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethyl)benzenesulfonamide;

cis-2,4,5-trichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-2,4,6-trichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-2,3,4-trichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methyl-1-benzothiophene-2-sulfonamide;
cis-5-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxybenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-nitro-4-(trifluoromethyl)benzenesulfonamide;
cis-N-({5-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonyl}thien-2-yl)methyl)benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-(2-(methylthio)pyrimidin-4-yl)thiophene-2-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-bis(trifluoromethyl)benzenesulfonamide;
cis-2,6-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethyl)benzenesulfonamide;
cis-2-butoxy-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-(1,1-dimethylpropyl)benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-(phenylsulfonyl)thiophene-2-sulfonamide;
cis-4-(3-chloro-2-cyanophenoxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-ethylbenzenesulfonamide;
cis-4-bromo-2,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-3-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxy-5-methylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-nitrobenzenesulfonamide;
cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}isonicotinamide;
cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-6-methylisonicotinamide;
cis-2,6-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}isonicotinamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-phenylpentanamide;

cis-N²-benzoyl-N¹-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}glycinamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-phenoxybutanamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(3-methyl-1H-indol-1-yl)propanamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(1-methyl-1H-benzimidazol-2-yl)propanamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(6-methoxy-3-oxo-2,3-dihydro-1H-inden-1-yl)acetamide;
cis-1-benzoyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}piperidine-4-carboxamide;
cis-N¹-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N³-(4-nitrobenzoyl)-β-alaninamide;
cis-N³-benzoyl-N¹-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-β-alaninamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(4-propoxyphenyl)urea;
cis-N-(5-tert-butyl-2-methoxyphenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(2-furylmethyl)urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-furylmethyl)urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyclohexylacetamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cycloheptylacetamide;
cis-2-((1R,4S)-bicyclo(2.2.1)hept-2-yl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide;
cis-2-(1-adamantyl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-fluorophenyl)acetamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-(trifluoromethyl)phenyl)acetamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-(trifluoromethyl)phenyl)acetamide;
cis-3,5-difluoro-N-(4-{(6-fluoro-2-(trifluoromethyl)quinolin-4-yl)amino}cyclohexyl)benzamide;
cis-3,5-difluoro-N-(4-{(8-(trifluoromethoxy)-2-(trifluoromethyl)quinolin-4-yl)amino}cyclohexyl)benzamide;
cis-N-(4-{(5,7-dichloro-2-(trifluoromethyl)quinolin-4-yl)amino}cyclohexyl)-3,5-difluorobenzamide;
cis-3,5-difluoro-N-(4-{(6-methyl-2-(trifluoromethyl)quinolin-4-yl)amino}cyclohexyl)benzamide;
cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-dichlorophenyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(3-methylphenyl)cyclohexane-1,4-diamine;
cis-N-(3,5-bis(trifluoromethyl)phenyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-N-1,1'-biphenyl-3-yl-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-(trifluoromethyl)phenyl)cyclohexane-1,4-diamine;
cis-4-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-2H-chromen-2-one;
cis-N,N'-bis(7-chloro-4-aminoquinolin-4-yl)cyclohexane-1,4-diamine;
cis-N-1,1'-biphenyl-3-yl-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinazolin-4-yl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-4-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-2H-chromen-2-one;
cis-N-{4-((2-amino-7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-difluorobenzamide;
cis-N-{4-((2-amino-7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dichlorobenzamide;
cis-N-{4-((2-amino-7-chloroquinolin-4-yl)amino)cyclohexyl}-4-phenoxybutanamide;
cis-7-chloro-N~4~-(4-{(3-(trifluoromethyl)benzyl)amino}cyclohexyl)quinoline-2,4-diamine;
cis-7-chloro-N~4~-(4-{(3-(trifluoromethoxy)benzyl)amino}cyclohexyl)quinoline-2,4-diamine;
cis-7-chloro-N~4~-(4-{(3,5-dimethylbenzyl)amino}cyclohexyl)quinoline-2,4-diamine;
cis-7-chloro-N~4~-(4-{(3,5-dichlorobenzyl)amino}cyclohexyl)quinoline-2,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-pyridin-2-ylcyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-isoquinolin-4-ylcyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-quinolin-3-ylcyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-{(5-(4-nitrophenyl)-2-furyl)methyl}cyclohexane-1,4-diamine;
cis-2-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1,2-di-2-furylethanone;
cis-N-(7-chloroquinolin-4-yl)-N'-(((2R)-1-(4-nitrophenyl)pyrrolidin-2-yl)methyl}cyclohexane-1,4-diamine;
cis-3,5-difluoro-N-(4-(quinolin-4-ylamino)cyclohexyl)benzamide;
cis-tert-butyl (2R)-2-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)methylpyrrolidine-1-carboxylate;
cis-N-(7-chloroquinolin-4-yl)-N'-1,4-dithiaspiro(4.5)dec-8-ylcyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-((6-methylpyridin-2-yl)methyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(2-thien-3-ylethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-{(2*S*)-1-(2-methoxybenzoyl)pyrrolidin-2-yl)methyl}cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(thien-3-ylmethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(2-thien-2-ylethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(thien-2-ylmethyl)cyclohexane-1,4-diamine;
cis-6-(4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)-1,3-dimethylpyrimidine-2,4(1*H*,3*H*)-dione;
cis-6-(4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)pyrimidine-2,4(1*H*,3*H*)-dione;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-(6-methylpyridin-2-yl)propyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-furylmethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-pyridin-2-ylpropyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(2-(2-methyl-5-nitro-1*H*-imidazol-1-yl)ethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-pyridin-3-ylpropyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-{(4*R*,5*S*)-2-methyl-5-phenyl-4,5-dihydro-1,3-oxazol-4-yl)methyl}cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(2-(4-methyl-1,3-thiazol-5-yl)ethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(tetrahydrofuran-2-ylmethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(pyridin-3-ylmethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-{2-(3-(6-methylpyridin-2-yl)propoxy)ethyl}cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-{(2*R*)-1-(2-methoxybenzoyl)pyrrolidin-2-yl)methyl}cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(tetrahydrofuran-3-ylmethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(2-furylmethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-((3-methyloxetan-3-yl)methyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-pyridin-4-ylpropyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-((3-ethyloxetan-3-yl)methyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(pyridin-2-ylmethyl)cyclohexane-1,4-diamine;

cis-N-(7-chloroquinolin-4-yl)-N'-(1H-imidazol-4-ylmethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-{((4S)-2,2-dimethyl-1,3-dioxolan-4-yl)methyl}cyclohexane-1,4-diamine;
cis-N-1,3-benzothiazol-2-yl-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-6-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-3-methylpyrimidine-2,4(1H,3H)-dione;
(1*S*,2*R*,4*S*,5*R*)-N,N'-bis(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamine;
(1*S*,2*R*,4*S*,5*R*)-N-(7-chloroquinolin-4-yl)-N'-(3,5-dimethylphenyl)-2,5-dimethylcyclohexane-1,4-diamine;
N-((1*S*,2*R*,4*S*,5*R*)-4-((7-chloroquinolin-4-yl)amino)-2,5-dimethylcyclohexyl)-3,5-difluorobenzamide;
5-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;
3-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide;
(1*S*,2*R*,4*S*,5*R*)-N,N'-bis(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamine;
4-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-6-methyl-2H-chromen-2-one;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methyl-2-phenylpentanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-5-methylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,2-diphenylacetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2-hydroxybenzamide;
N-{(1*S*,2*R*,4*S*,5*R*)-4-((7-chloroquinolin-4-yl)amino)-2,5-dimethylcyclohexyl}-3,5-difluorobenzamide;
N-(7-chloroquinolin-4-yl)-N'-(2',5'-dimethyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine;
3-(5-acetylthien-2-yl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide;
(2*R*)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxy-2-phenylacetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-5-methoxybenzamide;
(2*S*)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxy-2-phenylacetamide;
4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}quinoline-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-3-methylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,6-dimethoxynicotinamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylpentanamide;

N-(2-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-2-oxo-1-ethyl)-2-hydroxybenzamide;
3-chloro-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}pentanamide;
3'-amino-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide;
N~2~-acetyl-*N*~1~-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-*L*-leucinamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3,5-difluorophenyl)acetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-((4-methylpyrimidin-2-yl)thio)acetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-3'-hydroxy-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-3'-(hydroxymethyl)-1,1'-biphenyl-3-carboxamide;
3-(2-chlorophenyl)-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}propanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-4'-hydroxy-1,1'-biphenyl-3-carboxamide;
N-(5-bromopyridin-3-yl)-*N'*-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1*H*-indole-4-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}hexanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cyclopentanecarboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-methoxyphenoxy)acetamide;
N~1~-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-*N*~2~-((4-methylphenyl)sulfonyl)glycinamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}quinoxaline-2-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-methylphenoxy)acetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyclopentylacetamide;
(2*S*)-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-phenylbutanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methylcyclohexanecarboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-*N'*-phenylpentanediamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-phenylpropanamide;
3-(4-chlorophenyl)-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}propanamide;
4'-amino-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cycloheptanecarboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-oxo-4-thien-2-ylbutanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylcyclohexanecarboxamide;

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-4-methoxybenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cinnoline-4-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylcyclohexanecarboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(2-methylphenoxy)acetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylbutanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cyclohexanecarboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(2,5-dimethoxyphenyl)propanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylpentanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-6-methoxybenzamide;
3'-acetyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4,4,4-trifluorobutanamide;
5-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-3-methylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(phenylsulfonyl)propanamide;
N-(7-chloroquinolin-4-yl)-N'-(4-methoxy-3,5-dimethylphenyl)cyclohexane-1,4-diamine;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-phenoxypropanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-thien-2-ylbutanamide;
3-(1,3-benzodioxol-5-yl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3,4-dimethylphenoxy)acetamide;
2-(4-chloro-2-methylphenoxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2'-hydroxy-1,1'-biphenyl-3-carboxamide;
4'-acetyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-6-methylnicotinamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-phenylbutanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(4-methoxyphenyl)propanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-pyridin-4-ylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}heptanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(4-methoxyphenyl)-4-oxobutanamide;
2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}nicotinamide;

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(3-methoxyphenyl)propanamide;
2-(benzyloxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide;
N-(7-chloroquinolin-4-yl)-N'-(5-methyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine;
6-(2-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1,3-thiazol-4-yl)-3,4-dihydroquinolin-2(1H)-one;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-5-iodobenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}butanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-phenoxyphenyl)acetamide;
N-(3-bromo-5-methylphenyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyclopropylacetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,2-dimethylpropanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-fluoro-6-hydroxybenzamide;
N-(7-chloroquinolin-4-yl)-N'-(3-methyl-5-pyridin-4-ylphenyl)cyclohexane-1,4-diamine;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-oxo-4-phenylbutanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-thien-3-ylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-(E)-2-phenylvinylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-ethoxyacetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-ethylbutanamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-phenylcyclopropanecarboxamide;
3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;
N-(7-chloroquinolin-4-yl)-N'-(4',5-dimethyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine;
N-(7-chloroquinolin-4-yl)-N'-(3',5-dimethyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-thien-2-ylbenzamide;
N-(7-chloroquinolin-4-yl)-N'-(4-(3,4-dihydro-2H-1,5-benzodioxepin-7-yl)-1,3-thiazol-2-yl)cyclohexane-1,4-diamine;
N-(7-chloroquinolin-4-yl)-N'-(4-methyl-5-phenyl-1,3-thiazol-2-yl)cyclohexane-1,4-diamine;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-(methylsulfonyl)phenyl)acetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-8-hydroxyquinoline-7-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(pyrimidin-2-ylthio)acetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-1-naphthamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,3-dimethylbutanamide;

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}adamantane-1-carboxamide;
 N-(7-chloroquinolin-4-yl)-N'-(5-phenylpyridin-3-yl)cyclohexane-1,4-diamine;
 (2R)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-4-phenylbutanamide;
 3'-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-5'-methyl-1,1'-biphenyl-4-ol;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methylpentanamide;
 N'-{4-((2-N-methylamino-7-chloroquinolin-4-yl)amino)cyclohexyl}-7-chloro-N-methylquinoline-2,4-diamine;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-methylcyclohexanecarboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-3-isopropylbenzamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxy-2-naphthamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}tetrahydrofuran-2-carboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-methylphenoxy)acetamide;
 N-(7-chloroquinolin-4-yl)-N'-(4-(4-methoxyphenyl)-1,3-thiazol-2-yl)cyclohexane-1,4-diamine;
 3'-(((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)carbonyl)-5'-fluoro-1,1'-biphenyl-3-carboxylic acid;
 3'-(((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)carbonyl)-5'-fluoro-1,1'-biphenyl-4-carboxylic acid;
 N-(7-chloroquinolin-4-yl)-N'-(4,5-dimethyl-1,3-thiazol-2-yl)cyclohexane-1,4-diamine; and
 7-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-hydroxyquinoline-3-carboxamide.

Determination of Biological Activity

Assay for release of intracellular calcium:

Activation of the melanin concentrating hormone receptor (MCHR) by MCH induces the release of Ca^{++} from intracellular stores. This intracellular calcium release is measured using a fluorometric imaging plate reader (FLIPR™, Molecular Devices Corp.) in conjunction with the Ca^{++} -sensitive dye Fluo-4. Release of Ca^{++} from intracellular stores causes an increase in fluorescence of the dye that is proportional to Ca^{++} concentration. Briefly, the assays are performed as follows. HEK293 cells expressing the murine MCHR are plated overnight at 50,000 cells/well in 96-well plates. The following day, culture medium is removed and replaced with 100 μl /well of D-PBS (+glucose and sodium pyruvate) containing 2.5 μM Fluo-4AM (Molecular Probes), 0.01% Pluronic F-127 and 2.5 mM probenecid. Cells are loaded with the Fluo-4 dye for at least one hour at room temp. After

loading, the cells are washed gently to remove extracellular dye and 100 μ l of D-PBS (+glucose and sodium pyruvate) is added to each well. Test compounds are prepared at 40 μ M in 4% DMSO. The cell plate is placed in the FLIPR™ and 50 μ l/well of test compound is delivered. The calcium signal is followed for 3 minutes to assay for potential agonist activity by the test compounds. Then 50 μ l/well of 12 nM human MCH (in D-PBS containing 0.1% BSA) is added and the ligand-induced calcium signal is followed for an additional 3 minutes. Antagonist activity as determined by the test compounds ability to inhibit MCH induced Ca^{++} flux is calculated as % inhibition as described by the following formula:

$$\% \text{ inhibition} = (1 - ((fTC - fB) \div (fMCH - fB))) \times 100.$$

fTC = MCH-induced fluorescence in the presence of test compound;

fMCH = MCH-induced fluorescence in the absence of test compound;

fB = Baseline fluorescence.

MCH (3 nM) usually elicits a response of 30,000 – 40,000 relative fluorescence units (RFU) with a baseline of ~1000 RFU. Fluo-4 fluorescence is measured at 488 nm, with an exposure of 0.40 sec. and F-stop = 2.0 and the laser set at 0.40-0.60 W constant light output.

The compounds of the present invention inhibit MCH induced fluorescence at a dose of 10 μ M. In a preferred range, compounds of the present invention inhibit MCH induced fluorescence in a range of 75-100% inhibition of MCH at a dose of 10 μ M. In a more preferred range, compounds of the present invention inhibit MCH induced fluorescence in a range of 90-100% inhibition of MCH at a dose of 10 μ M.

Assay for the inhibition of MCH binding to MCHR:

1 μ g per well of cell membrane preparations of CHO-K cells expressing the human MCHR1 is added to a v-bottom micro titer plate (Costar). The well volume is brought up to 89 μ l using binding buffer (25mM Hepes pH 7.4, 1 mM CaCl_2 , 5 mM MgCl_2 , 0.5% BSA). 1 μ l of test compound, dissolved in 100% DMSO, is next added to the wells for a final concentration of 2 μ M followed by 10 μ l of ^{125}I -MCH (NEN). The final concentration of ^{125}I -MCH in each well is 50 pM. The plate is then placed on a titer plate shaker for 1 hour at room temperature. The samples are then transferred to a 0.1% PEI (Polyethylenimine, Sigma) treated glass fiber filter plate (Packard) using a Packard Filtermate Harvester. The filter plate is washed three times using 200 μ l wash buffer (Binding buffer without BSA and with 0.5M NaCl). Microscint 20 (Packard) is added to all wells and the plate is sealed with Topseal A (Packard). CPM is measured from the plate using a microplate scintillation counter (Topcount, Packard).

The compounds of the present invention inhibit binding of ^{125}I -MCH to human MCHR1 at a dose of 2 μ M. In a preferred range, compounds of the present invention inhibit binding of ^{125}I -MCH to human MCHR1 in a range of 75-100% inhibition of ^{125}I -MCH at a

dose of 2 μ M. In a more preferred range, compounds of the present invention inhibit binding of 125 I-MCH to human MCHR1 in a range of 90-100% inhibition of 125 I-MCH at a dose of 2 μ M.

As antagonists of MCH action upon the MCH receptor, therefore, the compounds of the present invention are useful in treating disorders that are mediated by MCH through the MCH receptor. Disorders that are mediated by MCH through the MCH receptor are obesity, abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration or psychiatric disorders. Therefore the compounds of the present invention are useful in treating obesity, abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration or psychiatric disorders.

Therapeutic agents acting through MCH receptor may also be useful in treatment of abnormalities in reproduction and sexual behavior (Murray, J.F.; Mercer J.G., Adan R.A., Datta J.J., Aldairy C, Moar KM, Baker BI, Stock MJ, Wilson, C.A.; The effect of leptin on luteinizing hormone release is exerted in the zona incerta and mediated by melanin-concentrating hormone. *J Neuroendocrinol* 12:1133-1139, 2000.; Gonzalez, M.I., Baker, B.I., Wilson, C.A.; Stimulatory effect of melanin-concentrating hormone on luteinising hormone release. *Neuroendocrinology* 66:254-262, 1997.; Murray, J.F., Adan, R.A., Walker, R., Baker, B.I., Thody, A.J., Nijenhuis, W.A., Yukitake, J., Wilson, C.A.; Melanin-concentrating hormone, melanocortin receptors and regulation of luteinizing hormone release. *J Neuroendocrinol* 12:217-223, 2000.; Nahon, J.L.; The melanin-concentrating hormone: from the peptide to the gene. *Crit Rev Neurobiol* 8:221-262, 1994.)

Therapeutic agents acting through MCH receptor may also be useful in treatment of thyroid hormone secretion (Kennedy, A.R., Todd, J.F., Stanley, S.A., Abbott, C.R., Small, C.J., Ghatei, M.A., Bloom, S.R.; Melanin-concentrating hormone (MCH) suppresses thyroid stimulating hormone (TSH) release, in vivo and in vitro, via the hypothalamus and the pituitary. *Endocrinology* 142:3265-3268. 2001).

Therapeutic agents acting through MCH receptor may also be useful in treatment of diuresis and water/electrolyte homeostasis (Hervieu, G., Volant, K., Grishina, O., Descroix-Vagne, M., Nahon, J.L.; Similarities in cellular expression and functions of melanin-concentrating hormone and atrial natriuretic factor in the rat digestive tract. *Endocrinology* 137:561-571, 1996.; and Parkes, D.G.; Diuretic and natriuretic actions of melanin concentrating hormone in conscious sheep. *J Neuroendocrinol* 8:57-63, 1996).

Therapeutic agents acting through MCH receptor may also be useful in treatment of sensory processing (Miller, C.L., Hruby, V.J., Matsunaga, T.O., Bickford, P.C.; Alpha-MSH

and MCH are functional antagonists in a CNS auditory gating paradigm. *Peptides* 14:431-440, 1993.; Kokkotou, E.G., Tritos, N.A., Mastaitis, J.W., Slieker, L., Maratos-Flier, E.; Melanin-concentrating hormone receptor is a target of leptin action in the mouse brain. *Endocrinology* 142:680-686, 2001).

Therapeutic agents acting through MCH receptor may also be useful in treatment of memory (Monzon, M.E., De Barioglio, S.R.; Response to novelty after i.c.v. injection of melanin-concentrating hormone (MCH) in rats. *Physiol Behav* 67:813-817, 1999).

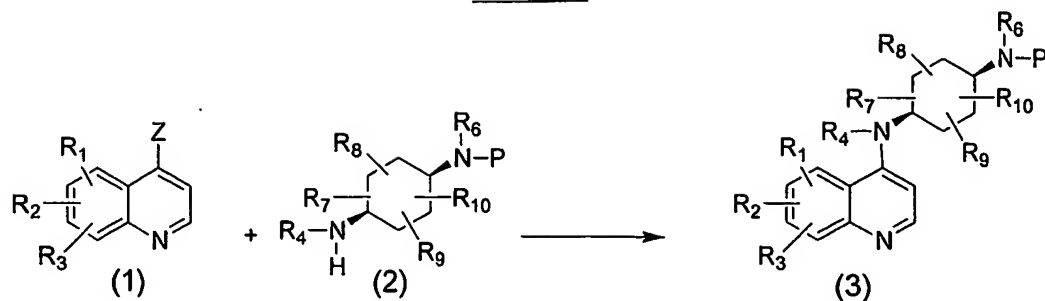
Therapeutic agents acting through MCH receptor may also be useful in treatment of sleeping and arousal (Bittencourt, J.C., Presse, F., Arias, C., Peto, C., Vaughan, J., Nahon, J.L., Vale, W., Sawchenko, P.E.; The melanin-concentrating hormone system of the rat brain: an immuno- and hybridization histochemical characterization. *J Comp Neurol* 319:218-245, 1992.; Nahon, J.L.; The melanin-concentrating hormone: from the peptide to the gene. *Crit Rev Neurobiol* 8:221-262, 1994).

Therapeutic agents acting through MCH receptor may also be useful in treatment of anxiety and depression (Monzon, M.E., Varas, M.M., De Barioglio, S.R.; Anxiogenesis induced by nitric oxide synthase inhibition and anxiolytic effect of melanin-concentrating hormone (MCH) in rat brain. *Peptides* 22:1043-1047, 2001.; Monzon, M.E., De Barioglio, S.R.; Response to novelty after i.c.v. injection of melanin-concentrating hormone (MCH) in rats. *Physiol Behav* 67:813-817, 1999.; Borowsky, B., Durkin, M.M., Ogozalek, K., Marzabadi, M.R., DeLeon, J., Lagu, B., Heurich, R., Lichtblau, H., Shaposhnik, Z., Daniewska, I., Blackburn, T.P., Branchek, T.A., Gerald, C., Vaysse, P.J., Forray, C.; Antidepressant, anxiolytic and anorectic effects of a melanin-concentrating hormone-1 receptor antagonist. *Nat. Med.* 8:825-830, 2002).

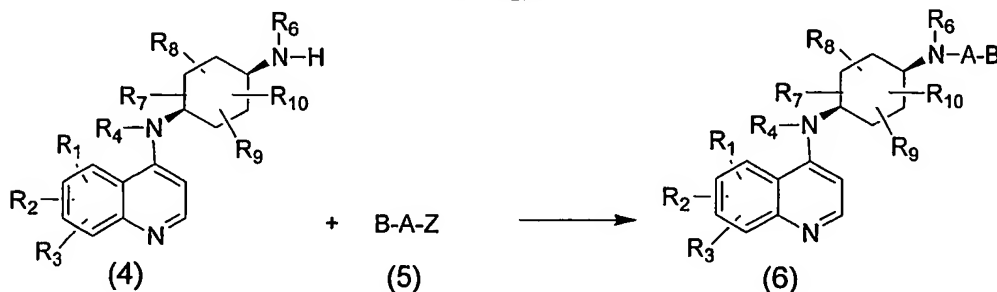
Therapeutic agents acting through MCH receptor may also be useful in treatment of seizure (Knigge, K.M., Wagner, J.E.; Melanin-concentrating hormone (MCH) involvement in pentylenetetrazole (PTZ)-induced seizure in rat and guinea pig. *Peptides* 18:1095-1097, 1997) and in treatment of neurodegeneration or psychiatric disorders (Nahon, J.L.; The melanin-concentrating hormone: from the peptide to the gene. *Crit Rev Neurobiol* 8:221-262, 1994).

Synthetic Methods

The compounds and processes of the present invention will be better understood in connection with the following synthetic schemes which together illustrate the methods by which the compounds of the invention may be prepared. The groups R₁, R₂, R₃, R₄, R₅, R₆, R₇, R₈, R₉, R₁₀ are as defined above unless otherwise noted below.

Scheme 1

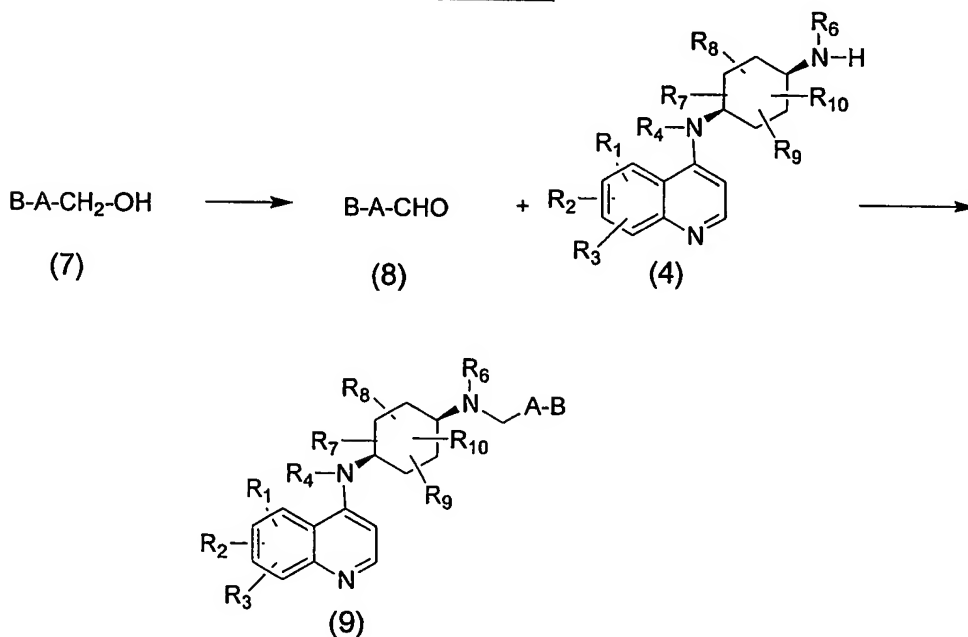
As shown in Scheme 1, compounds of formula (1) (Z is halogen) can be reacted under heated conditions with compounds of formula (2) (P is H or an optionally incorporated nitrogen protecting group such as but not limited to acetyl, tert-butoxycarbamate, benzylcarbamate and allylcarbamate), in the presence of base to form compounds of formula (3). Representative bases include but are not limited to triethylamine, diisopropylethylamine, N-methylmorpholine and sodium hydride. Examples of solvents used in these reactions include N-methylpyrrolidinone, N,N-dimethylformamide and dimethylsulfoxide. The reaction temperatures can range from between 60 °C to 230 °C and depends on the method and substrates chosen. Reaction times are typically between 10 minutes and 18 hours. When present, the optionally incorporated nitrogen protecting group can be removed to provide the amine (4) (Scheme 2), using standard conditions known to those skilled in the art.

Scheme 2

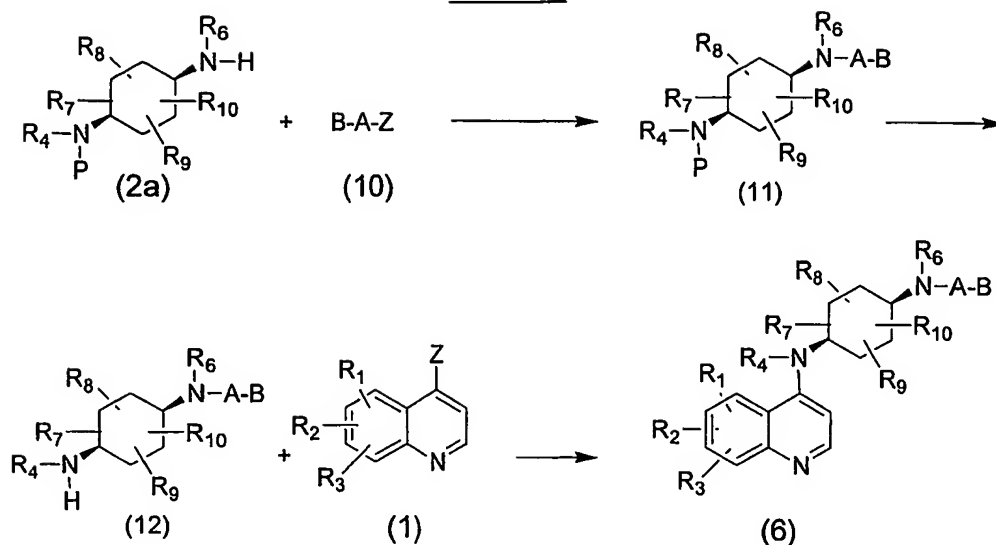
As shown in Scheme 2, compounds of formula (4) can be reacted with compounds of formula (5) (wherein B is a member selected from the group consisting of aryl, arylalkenyl, aryloxyalkyl, biarylalkyl, cycloalkyl or heterocycle; A is absent or alkylene; Z is halide) in the presence of base under heated conditions to provide compounds of formula (6). Representative conditions including appropriate bases, solvents, reaction temperatures and reaction times that are used in Scheme 1, also are appropriate for the conversion of compounds of formula (4) to compounds of formula (6) in Scheme 2. Compounds of formula (4) and compounds of formula (5) (wherein A is absent) can also be reacted under heated

conditions in the presence of palladium reagents such as but not limited to (1,1'-bis(diphenylphosphino)ferrocene)dichloropalladium(II) complex with dichloromethane and the like in solvents such as tetrahydrofuran, dioxane or N,N-dimethylformamide to provide compounds of formula (6). In addition, compounds of formula (4) and compounds of formula (5) (wherein A is alkylene and Z is chloride) can be reacted under heated conditions in the presence of potassium carbonate and sodium iodide in solvents such as acetonitrile or N,N-dimethylformamide to provide compounds of formula (6).

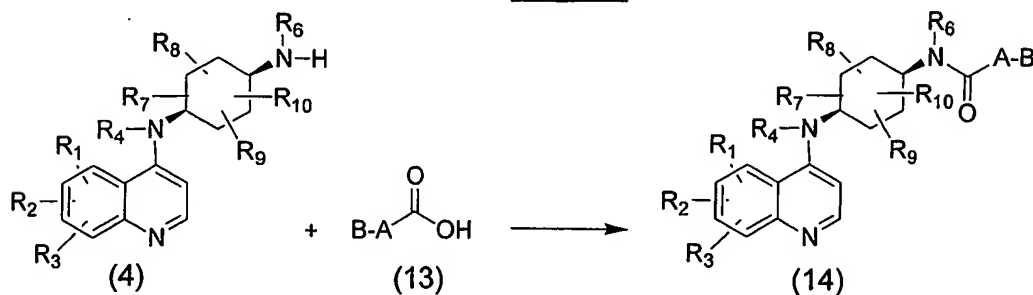
Scheme 3



As shown in Scheme 3, the oxidation of compounds of formula (7) (wherein B is aryl, arylalkenyl, aryloxyalkyl, biarylalkyl, cycloalkyl or heterocycle; A is absent or alkylene) utilizing reagents such as Dess-Martin periodinane in dichloromethane, tetrapropylammonium perruthenate, the Swern oxidation or one of the other commonly utilized oxidation techniques known to those skilled in the art will provide compounds of formula (8). Compound of formula (8) can be reacted with compound of formula (4) in the presence of acetic acid and MP-sodium cyanoborohydride to provide compounds of formula (9). Typical solvents include but are not limited to tetrahydrofuran and dichloromethane. Alternatively, in the reaction of Scheme 3, reagents such as but not limited to sodium cyanoborohydride or borane THF complex can be substituted for MP-sodium cyanoborohydride.

Scheme 4

Alternatively, as shown in Scheme 4, the synthesis of a compound of formula (6) can be achieved in a reverse fashion using the same reaction conditions as mentioned in Schemes 1 and 2 by first reacting a compound of formula (2a) (P is an optionally incorporated nitrogen protecting group as described above) with a compound of formula (10) (wherein B is aryl, aryloxyalkyl, biarylalkyl, cycloalkyl or heterocycle; A is alkylene; Z is halide) to provide a compound of formula (11). Conditions required for removal of the amine protecting group (P) of a compound of formula (11) are commonly known by those skilled in the art to provide a compound of formula (12). A compound of formula (12) is reacted with a compound of formula (1) (Z is halogen) to provide the compound of formula (6) using conditions listed previously in Schemes 1 and 2.

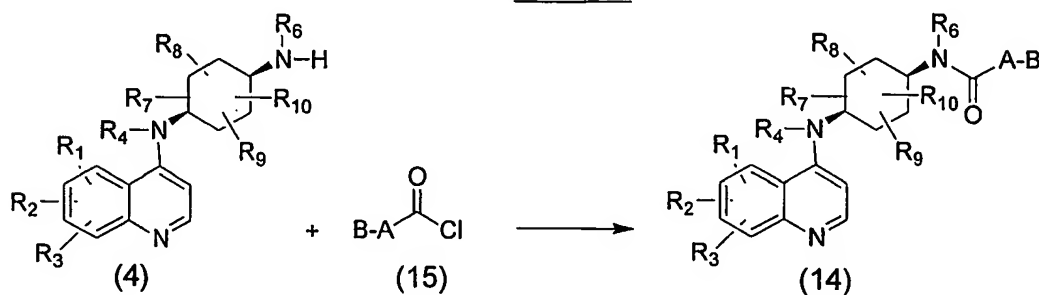
Scheme 5

As shown in Scheme 5, compounds of formula (4) can be reacted with compounds of formula (13) (wherein B is aryl, arylalkenyl, aryloxyalkyl, biarylalkyl, cycloalkyl or heterocycle; A is absent or alkylene) in the presence of MP-dicyclohexylcarbodiimide, N -

hydroxybenzotriazole and a base in a solvent to provide compounds of formula (14). Typical bases include but are not limited to di-isopropylethylamine or N-methylmorpholine.

Examples of solvents used in these reactions include but are not limited to N,N-dimethylformamide and dichloromethane. These reactions are typically done at room temperature and reaction times are typically between 6 and 24 hours. Alternatively, in the reaction of Scheme 5, dicyclohexylcarbodiimide or 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide hydrochloride can be substituted for MP-dicyclohexylcarbodiimide.

Scheme 6



Alternatively, compounds of formula (14) can be made by reacting compounds of formula (4) with compounds of formula (15) (wherein B is aryl, arylalkenyl, aryloxyalkyl, biarylalkyl, cycloalkyl or heterocycle; A is absent or alkylene) in the presence of base in a solvent. Typical bases used in these reactions are the same as in Scheme (5). Typical solvents include but are not limited to tetrahydrofuran and N,N-dimethylformamide and reaction times are typically between 4 and 16 hours.

Alternatively, the synthesis of a compound of formula (14) can be achieved in a reverse fashion by reacting either compounds of formula (13) with compounds of formula (2a) (P is a nitrogen protecting group which is later removed prior to the next step) using the same reaction conditions as mentioned in Scheme 5 or by reacting compounds of formula (15) with compounds of formula (2a) using the same reaction conditions as mentioned in Scheme 6. The products would then be treated with compounds of formula (1) using conditions listed previously in Scheme 1 to provide a compounds of formula (14).

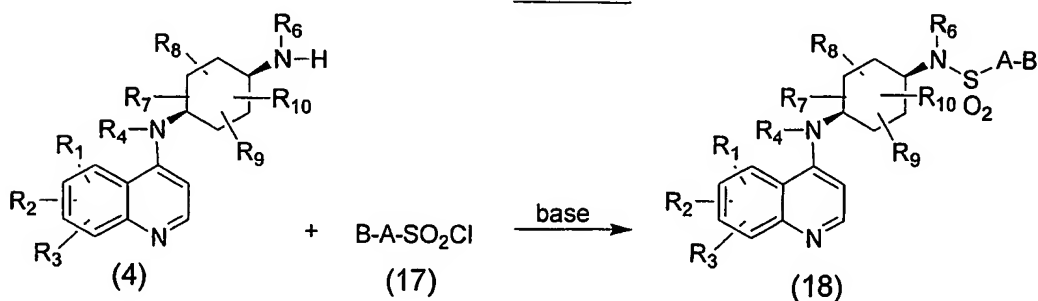
Scheme 7



As shown in Scheme 7, compounds of formula (4) can be reacted with compounds of formula (15) (wherein B is aryl, arylalkenyl, aryloxyalkyl, biarylalkyl, cycloalkyl or heterocycle; A is absent or alkylene) in solvents such as but not limited to chloroform, dichloromethane and tetrahydrofuran, to provide compounds of formula (16). These reactions are done at room temperature and reaction times are typically between 6 and 24 hours.

Alternatively, the synthesis of a compound of formula (16) can be achieved in a reverse fashion by reacting compounds of formula (15) with compounds of formula (2a) (P is a nitrogen protecting group which is later removed prior to the second reaction in this sequence) using the same reaction conditions as mentioned in Scheme 7. The product would then be treated with compound of formula (1) to provide a compound of formula (16) using conditions listed previously in Scheme 1.

Scheme 8



As shown in Scheme 8, compounds of formula (4) can be reacted with compounds of formula (17) (wherein B is aryl, arylalkenyl, aryloxyalkyl, biarylalkyl, cycloalkyl or heterocycle; A is absent or alkylene) in the presence of a base to provide compounds of formula (18). Typical bases include but are not limited to di-isopropylethylamine or N-methylmorpholine. Typical solvents include but are not limited to tetrahydrofuran and N,N-dimethylformamide and reaction times are between 4 and 16 hours.

Alternatively, the synthesis of a compound of formula (18) can be achieved in a

reverse fashion by reacting compounds of formula (17) with compounds of formula (2a) (P is a nitrogen protecting group which is later removed prior to the next step) using the same reaction conditions as mentioned in Scheme 8. The product would then be treated with compound of formula (1) to provide a compound of formula (18) using conditions listed previously in Scheme 1.

The present invention will now be described in connection with certain preferred embodiments which are not intended to limit its scope. On the contrary, the present invention covers all alternatives, modifications, and equivalents as can be included within the scope of the claims. Thus, the following examples, which include preferred embodiments, will illustrate the preferred practice of the present invention, it being understood that the examples are for the purposes of illustration of certain preferred embodiments and are presented to provide what is believed to be the most useful and readily understood description of its procedures and conceptual aspects.

Compounds of the invention were named by ACD/ChemSketch version 5.01 (developed by Advanced Chemistry Development, Inc., Toronto, ON, Canada) or were given names which appeared to be consistent with ACD nomenclature.

Example 1

cis-N,N'-bis(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

A solution of 4,7-dichloroquinoline(5.4g, 28.1 mmol), 1,4-diaminocyclohexane(1.4g, 12.3 mmol, 2:1 *cis*:*trans*), and triethylamine(3.6g, 36.9mmol) in 1-methyl-2-pyrrolidinone (7ml) was heated to 150° C for 15 hours, cooled to room temperature, diluted with diethyl ether and water, and filtered. The residue was flash chromatographed through silica gel column with dichloromethane, methanol and triethylamine (8:1:1 ratio by vol) to provide the desired compound as white solid. MS (ESI(+))Q1MS m/z 437 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.43 (d, 2 H), 8.41 (s, 2 H), 7.79 (d, 2 H), 7.46 (dd, 2 H), 6.92 (d, 2 H), 6.59 (d, 2 H), 3.77 (br.s, 2 H), 1.99 (m, 4 H), 1.83 (m, 4 H).

Example 2

cis-N-(4-chlorophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea

A solution of N-(7-chloroquinolin-4-yl)-cyclohexane-1,4-diamine (20 mg, 0.07 mmol) in chloroform (0.5 mL) at 20°C was treated with 4-chlorophenyl isocyanate (11 mg, 0.07 mmol). The mixture was shaken at room temperature for 18 hours then concentrated under reduced pressure. The compound was purified by reverse phase HPLC to provide the desired compound. MS (ESI (+)) m/e 429 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm

8.55 (s, 1 H), 8.52 (d, 1 H), 8.45 (d, 1 H), 7.83 (s, 1 H), 7.57 (d, 1 H), 7.41 (d, 2 H), 7.26 (d, 2 H), 6.70 (s, 1 H), 6.31 (d, 1 H), 3.78 (s, 1 H), 3.71 (s, 1 H), 1.63-1.93 (m, 8 H).

Example 3

cis-N-(2,8-bis(trifluoromethyl)quinolin-4-yl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

A solution of N-(7-chloroquinolin-4-yl)-cyclohexane-1,4-diamine (20 mg, 0.07 mmol) in *N*-methylpyrrolidine (0.5 mL) at 150 °C was treated with 4-chloro-2,8-bis(trifluoromethyl)quinoline (21 mg, 0.07 mmol), and triethylamine (10 µl, 0.07 mmol). The mixture was stirred at 150 °C for 18 hours then concentrated under reduced pressure. The compound was purified by reverse phase HPLC to provide the desired compound. MS (ESI(+))Q1MS *m/z* 539 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.81 (d, 1 H), 8.73 (d, 1 H), 8.20 (d, 1 H), 7.93 (d, 1 H), 7.83 (dd, 1 H), 7.71 (t, 1 H), 7.51 (d, 1 H), 7.05 (d, 1 H), 6.98 (s, 1 H), 4.12-4.02 (m, 2 H), 2.10-2.02 (m, 4 H), 1.93-1.86 (m, 4 H).

Example 4

cis-N-(7-chloroquinolin-4-yl)-N'-(8-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloro-8-trifluoromethylquinoline for 4-chloro-2,8-bis(trifluoromethyl)quinoline. MS (ESI(+))Q1MS *m/z* 471 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 13.83-13.76 (br s, 1 H), 8.82 (d, 2 H), 8.75 (d, 1 H), 8.59 (d, 1 H), 8.50 (d, 1 H), 8.20 (br s, 1 H), 7.95 (d, 1 H), 7.81 (dd, 1 H), 7.70 (br s, 1 H), 7.03 (d, 1 H), 6.87 (br s, 1 H), 4.15-4.07 (m, 1 H), 4.06-3.98 (m, 1 H), 2.15-2.02 (m, 4 H), 1.95-1.84 (m, 4 H).

Example 5

cis-N-(7-chloroquinolin-4-yl)-N'-(7-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloro-7-trifluoromethylquinoline for 4-chloro-2,8-bis(trifluoromethyl)quinoline. MS (ESI(+))Q1MS *m/z* 471 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.95 (d, 1 H), 8.90 (br s, 1 H), 8.80 (d, 1 H), 8.77 (d, 1 H), 8.73 (d, 1 H), 8.60 (d, 1 H), 8.26 (s, 1 H), 8.06 (d, 1 H), 7.97 (d, 1 H), 7.82 (dd, 1 H), 7.14 (d, 1 H), 7.04 (d, 1 H), 6.87 (br s, 1 H), 4.20-4.10 (m, 2 H), 2.15-2.03 (m, 4 H), 1.95-1.85 (m, 4 H).

Example 6

cis-N-(7-chloroquinolin-4-yl)-N'-(2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloro-2-trifluoromethylquinoline for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 471 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.75 (d, 1 H), 8.59 (d, 1 H), 8.50 (d, 1 H), 7.95 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.77(ddd, 1 H), 7.60 (ddd, 1 H), 7.21 (d, 1 H), 7.03 (d, 1 H), 6.82 (s, 1 H), 4.14-4.05 (m, 1 H), 4.02-3.95(m, 1 H), 2.13-2.00 (m, 4 H), 1.93-1.82 (m, 4 H).

Example 7

cis-N-(7-chloroquinolin-4-yl)-N'-(2-methylquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloro-2-methylquinoline for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 417 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.72 (d, 1 H), 8.62 (d, 1 H), 8.59 (d, 1 H), 8.45 (d, 1 H), 7.95 (d, 1 H), 7.92 (ddd, 1 H), 7.84 (d, 1 H), 7.82-7.78 (m, 1 H), 7.70(s, 1 H), 7.68 (ddd, 1 H), 6.98 (d, 1 H), 6.92 (s, 1 H), 4.15-4.05 (m, 2 H), 2.65 (s, 3 H), 2.13-2.00 (m, 4 H), 1.93-1.82 (m, 4 H).

Example 8

cis-N-(7-chloroquinolin-4-yl)-N'-(quinolin-3-ylmethyl)cyclohexane-1,4-diamine

A solution of N-(7-chloroquinolin-4-yl)-cyclohexane-1,4-diamine (40 mg, 0.14 mmol) and 3-quinolinecarboxaldehyde (22 mg, 0.14 mmol) in dichloroethane (0.5 mL) and methanol (0.5 mL) was treated acetic acid (0.018 mg, 0.28 mmol) and MP-cyanoborohydride (100 mg, 0.436 mmol, Argonaut Technologies). The mixture was stirred at 60 °C for 18 hours, filtered, and purified by reverse phase HPLC to provide the desired compound. MS(ESI) m/e 417 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 9.17 (br.s, 1 H), 9.04 (d, 1 H), 8.78 (d, 1 H), 8.70 (d, 1 H), 8.61 (d, 1 H), 8.56 (d, 1 H), 8.10 (d, 1 H), 8.03 (dd, 1 H), 8.00 (d, 1 H), 7.85 (ddd, 1 H), 7.80 (dd, 1 H), 7.70 (ddd, 1 H), 6.98 (d, 1 H), 4.48 (br.s, 2 H), 4.12 (br.s, 1 H), 3.40 (br s, 1 H), 2.08-1.80 (m, 8 H).

Example 9*cis*-N-(7-chloroquinolin-4-yl)-N'-(quinolin-4-ylmethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 8 by substituting 4-quinolinecarboxaldehyde for 3-quinolinecarboxaldehyde. MS(ESI) m/e 417 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 9.22 (br.s, 1 H), 9.02 (d, 1 H), 8.78 (d, 1 H), 8.68 (d, 1 H), 8.61 (d, 1 H), 8.26 (d, 1 H), 8.15 (d, 1 H), 7.99 (d, 1 H), 7.88 (ddd, 1 H), 7.80 (dd, 1 H), 7.77 (ddd, 1 H), 7.76 (d, 1 H), 6.98 (d, 1 H), 4.80 (br.s, 2 H), 4.18 (br.s, 1 H), 3.51 (br s, 1 H), 2.20-1.80 (m, 8 H).

Example 10*cis*-N-(4-bromobenzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 8 by substituting 4-bromobenzaldehyde for 3-quinolinecarboxaldehyde. MS(ESI) m/e 446 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.98 (br.s, 1 H), 8.77 (d, 1 H), 8.60 (d, 1 H), 8.59 (d, 1 H), 7.98 (d, 1 H), 7.78 (dd, 1 H), 7.67(d, 2 H), 7.50 (d, 2 H), 6.95 (d, 1 H), 4.21 (br.s, 2 H), 4.08 (m, 1 H), 3.23 (m, 1 H), 2.12-1.77 (m, 8 H).

Example 11*cis*-N-(7-chloroquinolin-4-yl)-N'-(3,4-difluorobenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 8 by substituting 3,4-difluorobenzaldehyde for 3-quinolinecarboxaldehyde. MS(ESI) m/e 402 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 9.05 (br.s, 1 H), 8.77 (d, 1 H), 8.65 (d, 1 H), 8.60 (d, 1 H), 7.99 (d, 1 H), 7.78 (dd, 1 H), 7.65 (ddd, 1 H), 7.55 (dd, 1 H), 7.40 (dd, 1 H), 6.95 (d, 1 H), 4.23 (br.s, 2 H), 4.09 (m, 1 H), 3.25 (m, 1 H), 2.12-1.77 (m, 8 H).

Example 12*cis*-N-(3-bromobenzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 8 by substituting 3-bromobenzaldehyde for 3-quinolinecarboxaldehyde. MS(ESI) m/e 446 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 9.01 (br.s, 1 H), 8.78 (d, 1 H), 8.65 (d, 1 H), 8.60 (d, 1 H), 8.00 (d, 1 H), 7.80 (s, 1 H), 7.77 (dd, 1 H), 7.65 (d, 1 H), 7.55 (d, 1 H), 7.42 (dd, 1 H), 6.95 (d, 1 H), 4.22 (br.s, 2 H), 4.10 (m, 1 H), 3.25 (m, 1 H), 2.12-1.77 (m, 8 H).

Example 13

cis-N-(7-chloroquinolin-4-yl)-N'-{(4-(dimethylamino)-1-naphthyl)methyl}cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 8 by substituting 4-dimethylamino-1-naphthaldehyde for 3-quinolinecarboxaldehyde. MS(ESI) m/e 459 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.82 (br.s, 1 H), 8.78 (d, 1 H), 8.62 (d, 1 H), 8.61 (d, 1 H), 8.26 (dd, 1 H), 8.15 (dd, 1 H), 7.99 (d, 1 H), 7.80 (dd, 1 H), 7.67-7.58 (m, 3 H), 7.18 (d, 1 H), 6.95 (d, 1 H), 4.62 (m, 2 H), 4.15 (m, 1 H), 3.50 (m, 1 H), 2.18-1.80 (m, 8 H).

Example 14

cis-N-(7-chloroquinolin-4-yl)-N'-(4-pyridin-2-ylbenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 8 by substituting 4-(2-pyridine)-benzaldehyde for 3-quinolinecarboxaldehyde. MS(ESI) m/e 443 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 9.01 (br.s, 1 H), 8.78 (d, 1 H), 8.70 (m, 1 H), 8.67 (d, 1 H), 8.60 (d, 1 H), 8.19 (d, 2 H), 8.05 (d, 1 H), 8.00 (d, 1 H), 7.95 (ddd, 1 H), 7.80 (dd, 1 H), 7.65 (d, 2 H), 7.40 (m, 1 H), 6.98 (d, 1 H), 4.35 (m, 2 H), 4.12 (m, 1 H), 3.30 (m, 1 H), 2.14-1.78 (m, 8 H).

Example 15

cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

A solution of N-(7-chloroquinolin-4-yl)-cyclohexane-1,4-diamine (20 mg, 0.07 mmol) in pyridine (1.0 mL) at 20 °C was treated with 4-chlorobenzenesulfonyl chloride (15 mg, 0.07 mmol). The reaction was shaken at room temperature for 18 hours then concentrated. The crude compound was purified by reverse phase HPLC to provide the desired compound. MS (ESI (+)) m/e 450 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, 1 H), 8.71 (d, 1 H), 8.53 (d, 1 H), 7.93 (d, 1 H), 7.87 (d, 2 H), 7.81 (dd, 1 H), 7.70 (d, 3 H), 6.95 (d, 1 H), 3.86 (br.s, 1 H), 3.14 (m, 1 H), 1.89 (m, 2 H), 1.74 (m, 4 H), 1.58 (m, 2 H).

Example 16*cis*-N-(7-chloroquinolin-4-yl)-N'-(2-phenylquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloro-2-phenylquinoline for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 479 (M+H)⁺.

Example 17*cis*-N-(7-chloroquinolin-4-yl)-N'-(6-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloro-6-trifluoromethylquinoline for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 471 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 9.20 (br s, 1 H), 9.06 (d, 1 H), 8.80 (d, 1 H), 8.76 (d, 1 H), 8.67 (d, 1 H), 8.60 (d, 1 H), 8.25 (dd, 1 H), 8.10 (d, 1 H), 7.96 (d, 1 H), 7.82 (dd, 1 H), 7.13 (d, 1 H), 7.03 (d, 1 H), 4.20-4.10 (m, 2 H), 2.15-2.04 (m, 4 H), 1.99-1.88 (m, 4 H).

Example 18*cis*-N-(7-chloroquinolin-4-yl)-N'-(6-methyl-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloro-6-methyl-2-trifluoromethylquinoline for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 485 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.88 (d, 1 H), 8.75 (d, 1 H), 8.59 (d, 1 H), 8.30 (s, 1 H), 7.94 (s, 1 H), 7.84-7.78 (m, 2 H), 7.61 (dd, 1 H), 7.10 (d, 1 H), 7.05 (d, 1 H), 6.79 (s, 1 H), 4.13-4.05 (m, 1 H), 4.00-3.93 (m, 1 H), 2.55 (s, 3 H), 2.17-2.00 (m, 4 H), 1.93-1.80 (m, 4 H).

Example 19*cis*-N-(7-chloroquinolin-4-yl)-N'-(6-fluoro-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloro-6-fluoro-2-trifluoromethylquinoline for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 489 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.85 (d, 1 H), 8.72 (d, 1 H), 8.58 (d, 1 H), 8.40 (dd, 1 H), 8.00 (dd, 1 H), 7.94

(d, 1 H), 7.81 (dd, 1 H), 7.69 (ddd, 1 H), 7.17 (d, 1 H), 7.04 (d, 1 H), 6.85 (s, 1 H), 4.15-4.04 (m, 1 H), 4.02-3.95 (m, 1 H), 2.12-2.00 (m, 4 H), 1.94-1.83 (m, 4 H).

Example 20

cis-N-(7-chloroquinolin-4-yl)-N'-(8-chloro-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloro-6-fluoro-2-trifluoromethylquinoline for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 505 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.85 (d, 1 H), 8.74 (d, 1 H), 8.58 (d, 1 H), 8.50 (dd, 1 H), 7.97 (dd, 1 H), 7.95 (d, 1 H), 7.81 (dd, 1 H), 7.57 (dd, 1 H), 7.39 (d, 1 H), 7.04 (d, 1 H), 6.93 (s, 1 H), 4.12-4.05 (m, 1 H), 4.04-3.98 (m, 1 H), 2.12-2.00 (m, 4 H), 1.94-1.83 (m, 4 H).

Example 21

cis-N-(7-chloroquinolin-4-yl)-N'-quinolin-4-ylcyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4-chloroquinoline for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 403 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.78 (d, 1 H), 8.72 (d, 1 H), 8.68 (d, 1 H), 8.60 (d, 1 H), 8.59 (d, 1 H), 7.98 (dd, 1 H), 7.98 (d, 1 H), 7.95 (m, 1 H), 7.81 (dd, 1 H), 7.75 (ddd, 1 H), 7.03 (d, 1 H), 7.01 (d, 1 H), 4.18-4.10 (m, 2 H), 2.15-2.03 (m, 4 H), 1.96-1.86 (m, 4 H).

Example 22

cis-N-(7-chloroquinolin-4-yl)-N'-(5,7-dichloro-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 4,5,7-trichloro-2-trifluoromethylquinoline for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 540 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.76 (d, 1 H), 8.55 (d, 1 H), 8.00 (d, 1 H), 7.97 (d, 1 H), 7.82 (d, 1 H), 7.78-7.71 (m, 3 H), 7.00 (d, 1 H), 6.95 (s, 1 H), 4.18-4.10 (m, 1 H), 4.05-3.98 (m, 1 H), 2.10-2.01 (m, 4 H), 1.96-1.86 (m, 4 H).

Example 23*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-indole-6-carboxamideExample 23A*cis*-N-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

A mixture of 4,7-dichloroquinoline(2g,10.2mmol) and 1,4-cyclohexanediamine (2.5g, 21.9 mmol) was heated at 250° C for 15 hours, cooled to room temperature, diluted with ethanol, and filtered. The residue was extracted with chloroform from 50%NaOH solution. The extract was dried with Na₂SO₄ and MgSO₄, filtered and concentrated to give the desired compound. MS (ESI(+))Q1MS m/z 276 (M+H)⁺.

Example 23B*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-indole-6-carboxamide

A mixture Example 23A (50mg, 0.18 mmol), indole-6-carboxylic acid(30mg, 0.18mmol), solid supported dicyclohexanecarbodiimide(0.36 mmol), 1-hydroxy-7-azabenzotriazole(5mg, .036mmol) and diisopropylethylamine (46mg, .36mmol) in 1 ml N,N-dimethylformamide was shaken for 15 hours, filtered. The filtrate was concentrated and the residue was purified by HPLC to provide the desired compound as its trifluoroacetic acid salt. MS (ESI(+))Q1MS m/z 419 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 13.71 (s, 1 H), 11.32 (s, 1 H), 8.83 (d, 1 H), 8.72 (d, 1 H), 8.57 (d, 1 H), 7.97 (d, 1 H), 7.95 (s, 1 H), 7.93 (d, 1 H), 7.81 (dd, 1 H), 7.58 (s, 2 H), 7.50 (t, 2 H), 7.00 (d, 2 H), 6.49 (m, 1 H), 4.02 (s, 1 H), 1.90-2.15 (m, 3 H), 1.68-1.90 (m, 3 H).

Example 24*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-(3,4-dichlorophenyl)methanesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting (3,4-dichlorophenyl)methanesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 499 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.70 (d, 1 H), 8.54 (d, 1 H), 7.94 (d, 1 H), 7.79 (dd, 1 H), 7.67 (m, 2 H), 7.40 (dd, 1 H), 7.12 (d, 1 H), 6.96 (d, 1 H), 4.45 (s, 2 H), 3.90 (br.s, 1 H), 3.50 (m, 1 H), 1.87 (m, 4 H), 1.70 (m, 4 H).

Example 25

cis-N-(7-chloroquinolin-4-yl)-N'-(1H-indol-6-ylmethyl)cyclohexane-1,4-diamine

A mixture of example 23A (30mg, 0.11 mmol), 6-formylindole (19.2mg, 0.132 mmol) and solid supported cyanoborohydride (0.22mmol) was shaken in 1:1 mixture tetrahydrofuran and acetic acid for 15 hours, filtered and concentrated. The residue was purified with a high throughput HPLC system to provide the desired compound as its bis TRIFLUOROACETIC ACID salt. MS (ESI(+)) Q1MS m/z 405 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 11.31 (s, 1 H), 8.74 (d, 1 H), 8.49-8.79 (m, 2 H), 7.96 (d, 1 H), 7.85 (dd, 1 H), 7.62 (d, 1 H), 7.56 (s, 1 H), 7.45 (t, 1 H), 7.13 (d, 1 H), 6.94 (d, 1 H), 6.47 (t, 1 H), 4.28 (br.s, 1 H), 4.08 (br.s, 1 H), 2.27 (s, 2 H), 1.73-2.13 (m, 9 H).

Example 26

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-(3,5-dichlorophenyl)methanesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting (3,5-dichlorophenyl)methanesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 500 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.70 (d, 1 H), 8.53 (d, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 7.63 (t, 1 H), 7.46 (d, 2 H), 7.17 (d, 1 H), 6.95 (d, 1 H), 4.47 (s, 2 H), 3.89 (br.s, 1 H), 3.49 (br.s, 1 H), 1.62-1.93 (m, 8 H).

Example 27

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-(methylthio)phenyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 3-(methylthio)phenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 441 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.77 (d, 1 H), 8.70 (d, 1 H), 8.55 (d, 1 H), 8.50 (s, 1 H), 7.93 (d, 1 H), 7.78 (dd, 1 H), 7.44 (t, 1 H), 7.16 (t, 1 H), 7.05 (m, 1 H), 6.97 (d, 1 H), 6.79 (m, 1 H), 6.36 (d, 1 H), 3.91 (br.s, 1 H), 3.80 (br.s, 1 H), 2.43 (s, 3 H), 1.79 (m, 8 H).

Example 28

cis-N-(2-chlorophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea

The titled compound was prepared according to the method described in Example 2 by substituting 2-chlorophenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 429 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.89 (d, 1 H), 8.72 (d, 1 H), 8.55 (d, 1 H), 8.21 (dd, 1 H), 8.09 (s, 1 H), 7.94 (d, 1 H), 7.79 (dd, 1 H), 7.40 (dd, 1 H), 7.22 (m, 2 H), 7.00 (d, 1 H), 6.94 (td, 1 H), 3.93 (br.s, 1 H), 3.82 (m, 1 H), 1.67-1.96 (m, 8 H).

Example 29

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(2-(trifluoromethyl)phenyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 2-(trifluoromethyl)phenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 463 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, 1 H), 8.72 (d, 1 H), 8.55 (d, 1 H), 8.03 (d, 1 H), 7.94 (d, 1 H), 7.83 (s, 1 H), 7.79 (dd, 1 H), 7.61 (d, 1 H), 7.57 (m, 1 H), 7.18 (m, 2 H), 7.00 (d, 1 H), 3.93 (br.s, 1 H), 3.81 (br.s, 1 H), 1.70-1.94 (m, 8 H).

Example 30

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-(trifluoromethyl)phenyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 3-(trifluoromethyl)phenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 463 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.89 (s, 1 H), 8.78 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 8.01 (s, 1 H), 7.93 (d, 1 H), 7.79 (dd, 1 H), 7.46 (d, 2 H), 7.23 (m, 1 H), 6.98 (d, 1 H), 6.52 (d, 1 H), 3.92 (br.s, 1 H), 3.82 (br.s, 1 H), 1.69-1.93 (m, 8 H).

Example 31

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(4-(trifluoromethyl)phenyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 4-(trifluoromethyl)phenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 463 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.94 (s, 1 H), 8.82 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.94 (d, 1 H), 7.79 (dd, 1 H), 7.58 (dd, 4 H), 6.99 (d, 1 H), 6.55 (d, 1 H), 3.94 (br.s, 1 H), 3.83 (br.s, 1 H), 1.68-1.91 (m, 8 H).

Example 32

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(4-(trifluoromethoxy)phenyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 4-trifluoromethoxyphenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 479 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, 1 H), 8.71 (s, 2 H), 8.55 (d, 1 H), 7.94 (d, 1 H), 7.80 (dd, 1 H), 7.49 (d, 2 H), 7.22 (d, 2 H), 7.00 (d, 1 H), 6.44 (d, 1 H), 3.94 (br.s, 1 H), 3.81 (br.s, 1 H), 1.68-1.93 (m, 8 H).

Example 33

cis-N-1,3-benzodioxol-5-yl-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea

The titled compound was prepared according to the method described in Example 2 by substituting 3,4-(Methylenedioxy)phenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 439 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, 1 H), 8.70 (d, 1 H), 8.55 (d, 1 H), 8.30 (s, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 7.18 (d, 1 H), 6.98 (d, 1 H), 6.77 (d, 1 H), 6.66 (dd, 1 H), 6.22 (d, 1 H), 5.93 (s, 2 H), 3.91 (br.s, 1 H), 3.78 (br.s, 1 H), 1.67-1.89 (m, 8 H).

Example 34

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-{3-((trifluoromethyl)thio)phenyl}urea

The titled compound was prepared according to the method described in Example 2 by substituting 3-trifluoromethylthiophenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 496 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (m, 2 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.96 (m, 1 H), 7.93 (d, 1 H), 7.79 (dd, 1 H), 7.46 (m, 1 H), 7.39 (t, 1 H), 7.23 (d, 1 H), 6.99 (d, 1 H), 6.48 (d, 1 H), 3.93 (br.s, 1 H), 3.81 (br.s, 1 H), 1.65-1.92 (m, 8 H).

Example 35

cis-N-(3-bromophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea

The titled compound was prepared according to the method described in Example 2 by substituting 3-bromophenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 474 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.71 (m, 2 H), 8.55 (d, 1

H), 7.94 (d, 1 H), 7.84 (m, 1 H), 7.79 (dd, 1 H), 7.19 (m, 2 H), 7.07 (m, 1 H), 6.99 (d, 1 H), 6.48 (d, 1 H), 3.93 (br.s, 1 H), 3.78 (br.s, 1 H), 1.64-1.92 (m, 8 H).

Example 36

cis-N-(4-bromophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea

The titled compound was prepared according to the method described in Example 2 by substituting 4-bromophenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 474 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.71 (d, 1 H), 8.63 (s, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.79 (dd, 1 H), 7.38 (d, 1 H), 7.38 (d, 4 H), 6.41 (d, 1 H), 3.92 (br.s, 1 H), 3.81 (br.s, 1 H), 1.70-1.91 (m, 8 H).

Example 37

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3,4-dichlorophenyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 3,4-dichlorophenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 464 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (s, 1 H), 8.76 (d, 1 H), 8.70 (d, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.87 (d, 1 H), 7.78 (dd, 1 H), 7.45 (d, 1 H), 7.23 (dd, 1 H), 6.97 (d, 1 H), 6.54 (d, 1 H), 3.92 (br.s, 1 H), 3.80 (br.s, 1 H), 1.68-1.92 (m, 8 H).

Example 38

cis-N,N'-bis((4E)-7-chloro-1-methylquinolin-4(1H)-ylidene)cyclohexane-1,4-diamine

A mixture of example 1 (200mg, .46mmol), and sodium hydride (110mg, 4.6 mmol) in THF at 0°C was treated with methyl iodide (261 mg, 1.8 mmol), warmed up to room temperature, stirred for 15 hours, cooled down to 0°C, treated with water, treated with methanol, and filtered to provide the titled compound. MS (ESI(+))Q1MS m/z 465 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D6) δ ppm 8.32 (d, 2 H), 7.32 (s, 2 H), 7.11-7.28 (m, 4 H), 5.92 (d, 2 H), 3.49 (s, 6 H), 1.47-1.93 (m, 10 H).

Example 39

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(2,4-dichlorophenyl)urea

The titled compound was prepared according to the method described in Example 2

by substituting 2,4-dichlorophenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 465 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.77 (d, 1 H), 8.70 (d, 1 H), 8.55 (s, 1 H), 8.25 (d, 1 H), 8.18 (s, 1 H), 7.93 (d, 1 H), 7.77 (dd, 1 H), 7.55 (d, 1 H), 7.32 (dd, 1 H), 7.24 (d, 1 H), 6.97 (d, 1 H), 3.91 (br.s, 1 H), 3.81 (br.s, 1 H), 1.66-1.95 (m, 8 H).

Example 40

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3,5-dichlorophenyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 3,5-dichlorophenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 464 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.92 (s, 1 H), 8.74 (d, 1 H), 8.70 (d, 1 H), 8.54 (d, 1 H), 7.92 (d, 1 H), 7.78 (dd, Hz, 1 H), 7.47 (d2 H), 7.07 (t, 1 H), 6.97 (d, 1 H), 6.58 (d, 1 H), 3.92 (br.s, 1 H), 3.80 (br.s, 1 H), 1.65-1.91 (m, 8 H).

Example 41

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-1-naphthylurea

The titled compound was prepared according to the method described in Example 2 by substituting 1-naphthyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 445 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.91 (d, 1 H), 8.74 (d, 1 H), 8.57 (m, 2 H), 8.12 (d, 1 H), 8.08 (dd, 1 H), 7.95 (d, 1 H), 7.90 (d, 1 H), 7.80 (dd, 1 H), 7.54 (m, 3 H), 7.42 (t, 1 H), 7.02 (d, 1 H), 6.86 (d, 1 H), 3.97 (br.s, 1 H), 3.88 (br.s, 1 H), 1.72-1.97 (m, 8 H).

Example 42

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-2-naphthylurea

The titled compound was prepared according to the method described in Example 2 by substituting 2-naphthyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 445 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.80 (m, 1 H), 8.71 (d, 1 H), 8.66 (s, 1 H), 8.55 (d, 1 H), 8.03 (d, 1 H), 7.93 (d, 1 H), 7.80 (m, 3 H), 7.73 (d, 1 H), 7.43 (m, 2 H), 7.32 (m, 1 H), 6.99 (d, 1 H), 6.42 (d, 1 H), 3.92 (br.s, 1 H), 3.92 (br.s, 1 H), 1.72-1.94 (m, 8 H).

Example 43*cis*-N-benzyl-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea

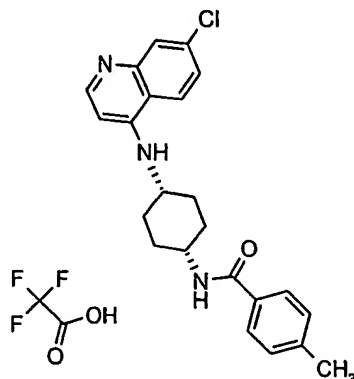
The titled compound was prepared according to the method described in Example 2 by substituting benzyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 409 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.75 (m, 1 H), 8.69 (d, 1 H), 8.53 (d, 1 H), 7.92 (d, 1 H), 7.77 (dd, 1 H), 7.28 (m, 5 H), 6.95 (d, 1 H), 6.28 (t, 1 H), 6.03 (d, 1 H), 4.22 (d, 2 H), 3.86 (br.s, 1 H), 3.71 (br.s, 1 H), 1.60-1.86 (m, 8 H).

Example 44*cis*-N-(3-chlorophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea

The titled compound was prepared according to the method described in Example 2 by substituting 3-chlorophenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 429 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.71 (m, 2 H), 8.64 (s, 1 H), 8.54 (d, 1 H), 7.92 (d, 1 H), 7.78 (dd, 1 H), 7.69 (t, 1 H), 7.24 (t, 1 H), 7.15 (d, 1 H), 6.96 (m, 2 H), 6.39 (d, 1 H), 3.91 (br.s, 1 H), 3.80 (br.s, 1 H), 1.67-1.91 (m, 8 H).

Example 45*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting m-toluic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 394 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.69 (d, 2 H), 8.55 (d, 1 H), 8.03 (d, 1 H), 7.92 (d, 1 H), 7.79 (d, 1 H), 7.69 (s, 1 H), 7.66 (m, 1 H), 7.35 (m, 2 H), 6.97 (d, 1 H), 3.98 (m, 2 H), 2.37 (s, 3 H), 1.99 (m, 4 H), 1.77 (m, 4 H).

Example 46cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting p-toluic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 394 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.80 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 7.98 (d, 1 H), 7.93 (d, 1 H), 7.81 (d, 1 H), 7.79 (d, 2 H), 7.27 (d, 2 H), 6.99 (d, 1 H), 3.99 (m, 2 H), 2.36 (s, 3 H), 1.90-2.06 (m, 4 H), 1.65-1.86 (m, 4 H).

Example 47cis-2-amino-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting N-Boc-2-aminobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 395 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.82 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.94 (s, 1 H), 7.86 (d, 1 H), 7.80 (dd, 1 H), 7.56 (d, 1 H), 7.17 (t, 1 H), 6.99 (d, 1 H), 6.73 (d, 1 H), 6.57 (t, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 3.99 (br.s, 2 H), 1.91-2.06 (m, 4 H), 1.66-1.85 (m, 4 H).

Example 48cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting salicylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 396 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.83 (d, 1 H), 8.63 (d, 1 H), 7.78 (dd, 2 H), 7.73 (d, 1 H), 7.59 (dd, 2 H), 7.48 (t, 1 H), 7.42 (m, 1 H), 6.85-6.94 (m, 2 H), 6.82 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 2.02-2.10 (m, 4 H), 1.85-1.93 (m, 4 H).

Example 49*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-Hydroxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 396 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.83 (d, 1 H), 8.80 (d, 1 H), 8.71 (d, 1 H), 8.62 (d, 1 H), 8.56 (d, 1 H), 7.97 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.59 (dd, 1 H), 7.22-7.32 (m, 3 H), 6.99 (d, 1 H), 6.92 (m, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 1.91-2.04 (m, 3 H), 1.68-1.84 (m, 3 H).

Example 50*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting *m*-anisic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 410 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.78 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 8.06 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.46 (d, 1 H), 7.33-7.43 (m, 2 H), 7.11 (ddd, 1 H), 6.99 (d, 1 H), 3.98 (br.s, 2 H), 3.81 (s, 3 H), 1.89-2.12 (m, 4 H), 1.65-1.88 (m, 4 H).

Example 51*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting *p*-anisic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 410 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.68 (d, 1 H), 8.54 (d, 1 H), 7.91 (d, 2 H), 7.87 (d, 2 H), 7.77 (d, 1 H), 6.99 (d, 2 H), 6.95 (d, 1 H), 3.96 (m, 2 H), 3.81 (s, 3 H), 1.91-2.04 (m, 5 H), 1.76 (m, 4 H).

Example 52*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluorobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-fluorobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 398 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.69 (d, 2 H), 8.55 (d, 1 H), 8.20 (d, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 7.73 (d, 1 H), 7.69 (ddd, 1 H), 7.53 (td, 1 H), 7.39 (m, 1 H), 6.98 (d, 1 H), 3.98 (m, 2 H), 1.91-2.11 (m, 4 H), 1.66-1.86 (m, 4 H).

Example 53*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-fluorobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 398 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.74 (d, 1 H), 8.70 (d, 1 H), 8.55 (d, 1 H), 8.12 (d, 1 H), 7.90-7.99 (m, 3 H), 7.79 (dd, 1 H), 7.30 (t, 2 H), 6.98 (d, 1 H), 3.98 (m, 2 H), 1.89-2.11 (m, 4 H), 1.68-1.87 (m, 4 H).

Example 54*cis*-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-chlorobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 414 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.69 (d, 1 H), 8.65 (br.s, 1 H), 8.55 (d, 1 H), 8.19 (d, 1 H), 7.92 (m, 3 H), 7.78 (dd, 1 H), 7.56 (t, 2 H), 6.96 (d, 1 H), 3.98 (m, 2 H), 1.90-2.07 (m, 4 H), 1.68-1.84 (m, 4 H).

Example 55*cis*-2-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-bromobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 458 and 460 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.73 (br.s, 1 H), 8.71 (d, 1 H), 8.34 (d, 1 H), 7.91 (d, 1 H), 7.77 (d, 1 H), 7.65 (d, 1 H), 7.30-7.50 (m, 3 H), 6.96 (d, 1 H), 4.00 (m, 1 H), 3.90 (m, 1 H), 1.87-2.12 (m, 4H), 1.58-1.89 (m, 5 H).

Example 56*cis*-3-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-bromobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 458 and 460 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.70 (d, 1 H), 8.55 (d, 1 H), 8.25 (d, 1 H), 8.08 (t, 1 H), 7.92 (d, 1 H), 7.87 (dt, 1 H), 7.79 (dd, 1 H), 7.74 (m, 1 H), 7.46 (m, 1 H), 6.97 (d, 1 H), 6.49 (s, 1 H), 3.98 (m, 2 H), 1.90-2.07 (m, 4 H), 1.69-1.87 (m, 4 H).

Example 57

cis-4-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-bromobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 458 and 460 (*M*+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.70 (d, 1 H), 8.55 (d, 1 H), 8.19 (d, 1 H), 7.81-7.88 (m, 3 H), 7.79 (dd, 1 H), 7.67-7.73 (m, 3 H), 6.97 (d, 1 H), 3.99 (br.s, 2 H), 1.88-2.06 (m, 4 H), 1.66-1.86 (m, 4 H).

Example 58

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-cyanobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-cyanobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 405 (*M*+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.68 (d, 1 H), 8.55 (d, 1 H), 8.38 (d, 1 H), 8.02 (d, 2 H), 7.98 (d, 2 H), 7.91 (d, 1 H), 7.78 (dd, 1 H), 6.96 (d, 1 H), 6.48 (s, 1 H), 3.96 (m, 2 H), 1.90-2.08 (m, 4 H), 1.69-1.86 (m, 4 H).

Example 59

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(dimethylamino)benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-dimethylaminobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 423 (*M*+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.80 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 7.91-7.96 (m, 2 H), 7.80 (dd, 1 H), 7.26 (t, 1 H), 7.17 (d, 1 H), 6.99 (d, 1 H), 6.88 (dd, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 3.94-4.08 (m, 2 H), 2.54 (s, 6 H), 1.88-2.09 (m, 4 H), 1.54-1.89 (m, 4 H).

Example 60

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-cyanobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-cyanobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 405 (*M*+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.72 (br.s, 1 H), 8.69 (d, 1 H), 8.55 (d, 1 H), 8.33 (d, 1 H), 8.17 (d, 1 H), 8.02 (d, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 7.71 (t, 1 H), 6.98 (d, 1 H), 6.48 (s, 1 H), 3.99 (m, 2 H), 1.91-2.12 (m, 4 H), 1.78 (m, 4 H).

Example 61

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(dimethylamino)benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-dimethylaminobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 423 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81 (d, 1 H), 8.71 (d, 1 H), 8.63 (d, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.77 (d, 2 H), 7.66 (d, 1 H), 7.59 (dd, 1 H), 6.99 (d, 2 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 2.99 (s, 6 H), 1.88-1.97 (m, 4 H), 1.65-1.86 (m, 4 H).

Example 62

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethyl)benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-(trifluoromethyl)benzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 448 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.83 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.40 (d, 1 H), 8.22 (s, 1 H), 8.19 (d, 1 H), 7.93 (d, 1 H), 7.91 (s, 1 H), 7.81 (dd, 1 H), 7.73 (t, 1 H), 7.00 (d, 1 H), 3.94-4.08 (m, 2 H), 1.92-2.07 (m, 4 H), 1.70-1.88 (m, 4 H).

Example 63

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethyl)benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-(trifluoromethyl)benzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 448 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 8.36 (d, 1 H), 8.06 (d, 2 H), 7.93 (d, 1 H), 7.86 (d, 2 H), 7.81 (dd, 1 H), 7.00 (d, 1 H), 3.90-4.08 (m, 2 H), 1.88-2.12 (m, 4 H), 1.63-1.87 (m, 4 H).

Example 64

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,3-dimethylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,3-dimethylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 408 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.71 (d, 1 H), 8.56 (d, 1 H), 8.12

(d, 1 H), 7.91 (s, 1 H), 7.80 (d, 1 H), 7.22 (t, 1 H), 7.13 (d, 1 H), 7.12 (s, 1 H), 6.99 (d, 1 H), 3.97 (br.s, 2 H), 2.26 (s, 3 H), 2.22 (s, 3 H), 1.94 (m, 5 H), 1.78 (m, 4 H).

Example 65

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-dimethylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,4-dimethylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 408 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.78 (s, 1 H), 8.70 (d, 1 H), 8.55 (d, 1 H), 8.03 (d, 1 H), 7.92 (s, 1 H), 7.25 (d, 1 H), 7.06 (s, 1 H), 7.04 (d, 1 H), 6.98 (d, 1 H), 6.52 (s, 1 H), 3.96 (m, 2 H), 2.33 (s, 3 H), 2.30 (s, 3 H), 1.76 (m, 4 H), 1.67-1.85 (m, 4 H).

Example 66

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethoxy)benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-(trifluoromethoxy)benzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 464 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.70 (d, 1 H), 8.56 (d, 1 H), 8.32 (d, 1 H), 7.97 (dd, 1 H), 7.92 (d, 1 H), 7.82 (d, 1 H), 7.66 (t, 1 H), 7.63 (d, 1 H), 7.56 (d, 1 H), 6.98 (d, 1 H), 6.53 (s, 1 H), 4.00 (m, 2 H), 1.88-2.14 (m, 4 H), 1.66-1.88 (m, 4 H).

Example 67

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,5-dimethylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 408 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.82 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.11 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.13 (br.s, 3 H), 6.99 (d, 1 H), 2.64 (m, 2 H), 2.30 (s, 3 H), 2.29 (s, 3 H), 1.96 (m, 4 H), 1.77 (m, 4 H).

Example 68

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-dimethylbenzamide

The titled compound was prepared according to the methods described in Example

23, substituting 3,4-dimethylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 408 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.72 (d, 1 H), 8.57 (d, 1 H), 7.96 (d, 1 H), 7.93 (d, 1 H), 7.81 (d, 1 H), 7.70 (d, 1 H), 7.66 (d, 1 H), 7.62 (d, 1 H), 7.24 (dd, 1 H), 7.00 (d, 1 H), 3.98 (m, 2 H), 2.28 (s, 3 H), 2.27 (s, 3 H), 1.64-2.10 (m, 8 H).

Example 69

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-dimethoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,4-dimethoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 440 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.88 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 8.06 (d, 1 H), 7.96 (d, 1 H), 7.87 (d, J = 1 H), 7.80 (dd, 1 H), 7.02 (d, 1 H), 6.71 (d, 1 H), 6.66 (dd, 1 H), 4.13 (br.s, 1 H), 4.01 (s, 3 H), 3.98 (br.s, 1 H), 3.84 (s, 3 H), 1.68-2.01 (m, 8 H).

Example 70

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-dimethoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3,4-dimethoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 440 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.84 (d, 1 H), 8.81 (d, 1 H), 8.72 (d, 1 H), 8.64 (d, 1 H), 8.57 (d, 1 H), 7.93 (d, 1 H), 7.81 (dd, 1 H), 7.54 (dd, 1 H), 7.45 (d, 1 H), 7.00 (t, 1 H), 3.99 (br.s, 2 H), 3.82 (br.s, 6 H), 1.67-2.07 (m, 8 H).

Example 71

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dimethoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3,5-dimethoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 440 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.69 (d, 1 H), 8.56 (d, 1 H), 8.06 (d, 1 H), 7.92 (s, 2 H), 7.79 (dd, 1 H), 7.02 (s, 2 H), 6.97 (d, 1 H), 6.67 (s, 1 H), 3.98 (br.s, 2 H), 3.80 (s, 6 H), 1.87-2.10 (m, 5 H), 1.66-1.88 (m, 4 H).

Example 72

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-benzodioxole-5-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting piperonylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 424 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.79 (d, 1 H), 8.71 (d, 1 H), 8.64 (dd, 1 H), 7.93 (d, 1 H), 7.81 (dd, 1 H), 7.60 (dd, 1 H), 7.49 (dd, 1 H), 7.44 (d, 1 H), 7.00 (d, 1 H), 6.99 (d, 1 H), 6.10 (s, 2 H), 3.97 (br.s, 2 H), 1.64-2.08 (m, 8 H).

Example 73

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4,5-trimethoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3,4,5-trimethoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 470 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.72 (d, 1 H), 8.64 (d, 1 H), 8.57 (d, 1 H), 8.03 (d, 1 H), 7.93 (d, 1 H), 7.81 (d, 1 H), 7.60 (dd, 1 H), 7.20 (s, 2 H), 6.98 (d, 6 H), 6.98 (d, 1 H), 3.98 (br.s, 1 H), 3.71 (s, 3 H), 1.67-2.06 (m, 8 H).

Example 74

cis-2,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,4-dichlorobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 448 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.88 (d, 1 H), 8.74 (d, 1 H), 8.55 (d, 1 H), 8.44 (d, 1 H), 7.98 (d, 1 H), 7.77 (dd, 1 H), 7.67 (d, 1 H), 7.49 (d, 1 H), 7.47 (s, 1 H), 6.98 (d, 1 H), 4.03 (br.s, 1 H), 3.93 (br.s, 1 H), 1.69-2.01 (m, 8 H).

Example 75

cis-3,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3,4-dichlorobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 450 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.66 (d, 1 H), 8.54 (d, 1 H), 8.34 (d, 1 H), 8.15 (d, 1 H), 8.07 (s, 1 H), 8.07 (s, 1 H), 7.84-7.91 (m, 2 H), 7.73-7.80 (m, 2 H), 3.87-4.07 (br.s, 2 H), 1.66-2.09 (m, 8 H).

Example 76

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-furamide

The titled compound was prepared according to the methods described in Example 23, substituting furane-2-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 370 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.68 (d, 1 H), 8.63 (dd, 1 H), 8.55 (d, 1 H), 7.92 (s, 2 H), 7.92 (d, 1 H), 7.83 (s, 1 H), 7.80 (dd, 1 H), 7.15 (dd, 1 H), 6.98 (d, 1 H), 6.63 (dd, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 1.66-2.04 (m, 8 H).

Example 77

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-furamide

The titled compound was prepared according to the methods described in Example 23, substituting furane-3-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 370 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.83 (dd, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.25 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.77 (d, 1 H), 7.72 (t, 1 H), 6.99 (d, 1 H), 6.92 (dd, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 1.67-2.03 (m, 8 H).

Example 78

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethyl-3-furamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,5-dimethyl-3-furoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 398 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.79 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.42 (d, 1 H), 6.98 (d, 1 H), 6.55 (s, 1 H), 3.84-4.03 (m, 2 H), 2.46 (s, 3 H), 2.22 (s, 3 H), 1.63-2.01 (m, 8 H).

Example 79

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting thiophene-2-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 386 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.78 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 8.09 (d, 1 H), 7.93 (d, 1 H), 7.89 (dd, 1 H), 7.80 (dd, 1 H), 7.15 (dd, 1 H), 6.98 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 3.93-4.02 (m, 1 H), 1.68-2.08 (m, 8 H).

Example 80

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-3-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting thiophene-3-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 386 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.78 (d, 1 H), 8.71 (d, 1 H), 8.21 (d, 1 H), 7.93 (d, 1 H), 7.88 (d, 1 H), 7.79 (dd, 1 H), 7.54-7.62 (m, 2 H), 6.98 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 3.94-4.02 (m, 1 H), 1.67-2.05 (m, 8 H).

Example 81

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylthiophene-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-methylthiophene-2-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 400 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81 (d, 1 H), 8.73 (d, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.64 (d, 1 H), 7.57 (d, 1 H), 6.97-7.00 (m, 2 H), 3.90-4.04 (m, 2 H), 2.45 (s, 3 H), 1.68-2.03 (m, 8 H).

Example 82

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-pyrrole-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting pyrrole-2-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 369 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.80 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.79 (dd, 1 H), 7.54 (d, 1 H), 6.98 (d, 1 H), 6.84-6.89 (m, 2 H), 6.09 (dd, 1 H), 4.88 (t, 1 H), 4.88 (t, 1 H), 3.93-4.01 (m, 1 H), 1.62-2.05 (m, 8 H).

Example 83

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dimethylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3,5-dimethylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 408 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.69 (d, 1 H), 8.55 (d, 1 H), 8.00 (d, 1 H), 7.92 (s, 1 H), 7.79 (d, 1 H), 7.49 (s, 2 H), 7.16 (s, 1 H), 6.97 (d, 1 H), 3.88-4.02 (m, 1 H), 2.32 (s, 6 H), 1.66-2.05 (m, 10 H).

Example 84*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methylthiophene-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-methylthiophene-2carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 400 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.77 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.94 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.69 (d, 1 H), 6.98 (d, 1 H), 6.84 (d, 1 H), 3.83-4.06 (m, 2 H), 2.46 (s, 3 H), 1.64-2.08 (m, 8 H).

Example 85*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethyl-1H-pyrrole-3-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,5-dimethylpyrrole-3carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 397 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.83 (dd, 1 H), 8.78 (d, 1 H), 8.69 (d, 1 H), 8.63 (dd, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.59 (dd, 1 H), 6.98 (d, 1 H), 6.83 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 2.11 (s, 3 H), 2.08 (s, 3 H), 1.61-1.99 (m, 8 H).

Example 86*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,2,5-trimethyl-1H-pyrrole-3-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 1,2,5-trimethylpyrrole-3carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 411 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.83 (dd, 1 H), 8.69 (d, 1 H), 8.55 (d, 1 H), 8.55 (d, 1 H), 7.80 (dd, 1 H), 6.98 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 3.89-4.01 (m, 2 H), 3.35 (s, 3 H), 2.43 (s, 3 H), 2.15 (s, 3 H), 1.60-1.99 (m, 8 H).

Example 87*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-thiazole-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 1,3-thiazole carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 386 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.76 (d, 1 H), 8.65 (d, 1 H), 8.56 (d, 1 H), 8.21 (d, 1 H), 8.07 (d, 1 H), 8.03 (d, 1 H), 7.95 (d, 1 H), 7.79 (dd, 1 H), 7.00 (d, 1 H), 3.94-4.16 (m, 2 H), 1.70-2.07 (m, 8 H).

Example 88

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-methyl-1H-pyrrole-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 1-methylpyrrole-2-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 383 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.76 (d, 1 H), 8.70 (d, 1 H), 8.55 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 6.98 (d, 1 H), 6.88 (d, 1 H), 6.01 (dd, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 3.88-4.02 (m, 2 H), 3.83 (s, 3 H), 1.62-2.03 (m, 8 H).

Example 89

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-thiazole-4-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 1,3-thiazole-4-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 387 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 9.21 (d, 1 H), 8.83 (dd, 1 H), 8.77 (d, 1 H), 8.56 (d, 1 H), 8.36 (d, 1 H), 7.93 (s, 1 H), 7.79 (dd, 1 H), 7.59 (dd, 1 H), 7.01 (d, 1 H), 4.54 (t, 1 H), 3.95 (t, 1 H), 1.69-2.04 (m, 8 H).

Example 90

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-thiazole-5-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 1,3-thiazole-5-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 387 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.83 (dd, 1 H), 8.72 (d, 1 H), 8.59 (d, 1 H), 8.56 (d, 1 H), 8.35 (d, 1 H), 7.93 (d, 1 H), 7.81 (dd, 1 H), 6.99 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 3.91-4.03 (m, 1 H), 1.67-2.07 (m, 8 H).

Example 91

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}isoxazole-5-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting isoxazole-5-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 371 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.83 (dd, 1 H), 8.63 (dd, 1 H),

8.54 (d, 1 H), 7.91 (s, 1 H), 7.77 (d, 1 H), 7.59 (dd, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 3.96 (m, 2 H), 1.65-2.19 (m, 9 H).

Example 92

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methyl-3-phenylisoxazole-4-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-methyl-3-phenylisoxazole-4-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 461 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.79 (d, 1 H), 8.72 (d, 1 H), 8.55 (d, 1 H), 8.38 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.67-7.73 (m, 2 H), 7.47-7.52 (s, 3 H), 6.97 (d, 1 H), 3.84-4.08 (m, 2 H), 2.55 (s, 3 H), 1.67-1.95 (m, 8 H).

Example 93

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}pyridine-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting pyridine-2-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 381 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.83 (d, 1 H), 8.68 (d, 1 H), 8.64 (t, 1 H), 8.56 (d, 1 H), 8.40 (d, 1 H), 8.09 (d, 1 H), 8.04 (td, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 7.59 (dd, 1 H), 7.01 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 1.58-2.07 (m, 8 H).

Example 94

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxypyridine-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-hydroxy picolinic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 397 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.80 (d, 1 H), 8.66 (d, 1 H), 8.62 (d, 1 H), 8.57 (d, 1 H), 8.19 (dd, 1 H), 7.95 (d, 1 H), 7.81 (dd, 1 H), 7.57 (dd, 1 H), 7.46 (dd, 1 H), 7.02 (d, 1 H), 3.64-4.35 (m, 3 H), 1.71-2.13 (m, 8 H).

Example 96

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methylpyrazine-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-methylpyrazine-2-carboxylic acid for indole-6-carboxylic acid. MS

(ESI(+))Q1MS m/z 396 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 9.09 (dd, 1 H), 8.83 (dd, 1 H), 8.56 (d, 1 H), 8.29 (d, 1 H), 7.92 (d, 1 H), 7.80 (d, 1 H), 7.59 (dd, 1 H), 7.01 (d, 1 H), 7.01 (d, 3 H), 4.60 (t, 1 H), 4.15 (m, 1 H), 3.98 (t, 1 H), 1.72-2.11 (m, 8 H).

Example 97

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-indole-3-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting indole-3-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 419 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.84 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.15 (d, 1 H), 8.13 (d, 1 H), 7.94 (d, 1 H), 7.80 (dd, 1 H), 7.47 (d, 1 H), 7.43 (d, 1 H), 7.15 (td, 1 H), 7.10 (td, 1 H), 7.00 (d, 1 H), 4.88 (t, 1 H), 4.04 (d, 1 H), 4.00 (s, 1 H), 1.69-2.08 (m, 8 H).

Example 98

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-8-methyl-4-oxo-4H-pyrido(1,2-a)pyrimidine-3-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 8-methyl-4-oxo-4H-pyrido(1,2-a)pyrimidine-3-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 462 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 9.35 (d, 1 H), 9.10 (d, 1 H), 9.04 (s, 1 H), 9.01 (d, 1 H), 8.72 (d, 1 H), 8.57 (d, 1 H), 7.93 (d, 1 H), 7.75-7.80 (m, 2 H), 7.50 (dd, 1 H), 7.05 (d, 1 H), 3.50-4.28 (m, 2 H), 2.57 (s, 3 H), 1.68-2.00 (m, 8 H).

Example 99

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methyl-1-phenyl-1H-pyrazole-4-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-methyl-1-phenyl-1H-pyrazole-4-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 460 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.80 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.22 (s, 1 H), 7.93 (d, 1 H), 7.81 (dd, 1 H), 7.70 (d, 1 H), 7.46-7.62 (m, 5 H), 6.99 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 2.52 (s, 3 H), 1.68-2.05 (m, 8 H).

Example 100*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-oxo-4,5,6,7-tetrahydro-1-benzofuran-3-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-oxo-4,5,6,7-tetrahydro-1-benzofuran-3-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 460 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 9.93 (d, 1 H), 8.88 (s, 1 H), 8.74 (d, 1 H), 8.54 (d, 1 H), 8.26 (s, 1 H), 7.91 (s, 1 H), 7.78 (dd, 1 H), 7.00 (d, 1 H), 4.08 (br,s, 1 H), 3.92 (br,s, 1 H), 2.98 (t, 2 H), 2.62 (t, 2 H), 2.14 (t, 2 H), 1.73-2.00 (m, 8 H).

Example 101*cis*-6-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2H-chromene-3-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 2H-chromene-3-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 468 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.73 (s, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.25-7.30 (m, 3 H), 6.96 (d, 1 H), 6.89 (d, 1 H), 4.95 (s, 2 H), 4.93 (s, 1 H), 3.94 (m, 2 H), 1.66-2.02 (m, 8 H).

Example 102*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-ethylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-ethylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 408 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.82 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 8.02 (d, 1 H), 7.93 (d, 1 H), 7.81 (dd, 1 H), 7.80 (d, 2 H), 7.80 (d, 2 H), 7.00 (d, 1 H), 3.94-4.04 (br.s, 2 H), 2.66 (q, 2 H), 1.66-2.06 (m, 8 H), 1.20 (t, 3 H).

Example 103*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-4-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-hydroxy-4-methylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 410 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.79 (d, 1 H), 8.70 (d, 1 H), 8.57 (d, 1 H), 8.42 (d, 1 H), 7.93 (d, 1 H), 7.86 (d, 1 H), 7.80 (dd, 1 H), 7.66 (d,

1 H), 7.00 (d, 1 H), 6.76 (d, 1 H), 6.73 (s, 1 H), 3.97-4.09 (m, 2 H), 2.30 (s, 3 H), 1.72-2.03 (m, 8 H).

Example 104

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxy-4-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-hydroxy-4-methylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 410 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.84 (d, 1 H), 8.72 (br,s, 1 H), 8.70 (d, 1 H), 8.63 (d, 1 H), 8.56 (d, 1 H), 7.92 (d, 1 H), 7.90 (d, 1 H), 7.80 (dd, 1 H), 7.26 (d, 1 H), 6.97 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 3.91-4.01 (br.s, 1 H), 2.16 (s, 3 H), 1.62-2.05 (m, 8 H).

Example 105

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-fluoro-2-methylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 412 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.82 (d, 1 H), 8.70 (d, 1 H), 8.56 (d, 1 H), 8.25 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.29 (dd, 1 H), 7.19 (dd, 1 H), 7.15 (d, 1 H), 6.99 (d, 1 H), 3.88-4.04 (m, 2 H), 2.32 (s, 3 H), 1.68-2.04 (m, 8 H).

Example 106

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-4-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-fluoro-4-methylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 412 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.78 (d, 1 H), 8.70 (d, 1 H), 8.56 (d, 1 H), 8.13 (d, 1 H), 7.92 (s, 1 H), 7.81 (dd, 1 H), 7.66 (d, 1 H), 7.65 (s, 1 H), 7.40 (d, 1 H), 6.99 (d, 1 H), 3.88-4.02 (br.s, 2 H), 2.29 (s, 3 H), 1.65-2.06 (m, 8 H).

Example 107

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,3-difluorobenzamide

The titled compound was prepared according to the methods described in Example

23, substituting 2,3-difluorobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 416 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.84 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.17 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.67 (d, 1 H), 7.37 (d, 1 H), 7.18 (t, 1 H), 6.99 (d, 1 H), 4.02 (br,s, 1 H), 3.94 (br,s, 1 H), 1.70-2.02 (m, 8 H).

Example 108

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-difluorobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,4-difluorobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 416 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.86 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.18 (d, 1 H), 7.93 (s, 1 H), 7.80 (d, 1 H), 7.67 (dd, 1 H), 7.36 (t, 1 H), 7.18 (t, 1 H), 6.99 (d, 1 H), 4.02 (br,s, 1 H), 3.94 (br,s, 1 H), 1.68-2.02 (m, 8 H).

Example 109

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-difluorobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,5-difluorobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 416 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.82 (br,s, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.29 (d, 1 H), 7.92 (s, 1 H), 7.80 (dd, 1 H), 7.32-7.43 (m, 3 H), 6.99 (d, 1 H), 3.85-4.09 (m, 2 H), 1.69-2.04 (m, 8 H).

Example 110

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-difluorobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3,5-difluorobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 416 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81 (d, 1 H), 8.70 (d, 1 H), 8.57 (d, 1 H), 8.30 (d, 1 H), 7.93 (d, 1 H), 7.82 (dd, 1 H), 7.60 (d, 1 H), 7.56 (d, 1 H), 7.48 (t, 1 H), 7.00 (d, 1 H), 3.98 (br,s, 2 H), 1.68-2.07 (m, 8 H).

Example 111*cis*-2-(N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}glycyl)benzaldehyde

The titled compound was prepared according to the methods described in Example 23, substituting 2-acetylbenzoic acid for indole-6-carboxylic acid. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.90 (d, 1 H), 8.84 (d, 1 H), 8.64 (d, 1 H), 8.61 (t, 1 H), 8.56 (d, 1 H), 8.01 (dd, 1 H), 7.95 (d, 1 H), 7.71 (d, 1 H), 7.68 (t, 1 H), 7.60 (s, 1 H), 7.57 (d, 1 H), 4.11-4.32 (m, 2 H), 1.74-2.29 (m, 8 H), 1.63 (s, 3 H).

Example 112*cis*-4-acetyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-acetylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 422 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.79 (d, 1 H), 8.71 (d, 1 H), 8.57 (d, 1 H), 8.32 (d, 2 H), 7.93 (d, 1 H), 7.81 (dd, 1 H), 6.99 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 4.00 (br.s, 2 H), 2.63 (s, 3 H), 1.68-2.08 (m, 8 H).

Example 113*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methoxy-4-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-methoxy-4-methylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 424 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.82 (d, 1 H), 8.72 (d, 1 H), 8.57 (d, 1 H), 8.02 (d, 1 H), 7.94 (d, 1 H), 7.81 (dd, 1 H), 7.41 (br.d, 2 H), 7.22 (d, 1 H), 7.00 (d, 1 H), 3.94-4.05 (br.s, 2 H), 3.85 (s, 3 H), 2.19 (s, 3 H), 1.69-2.06 (m, 8 H).

Example 114*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-ethoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-ethoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 424 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.83 (d, 1 H), 8.66 (d, 1 H), 8.57 (d, 1 H), 8.24 (d, 1 H), 7.92 (s, 1 H), 7.89 (d, 1 H), 7.81 (dd, 1 H), 7.50 (t, 1 H), 7.18 (d, 1 H), 7.07 (t, 1 H), 7.03 (d, 1 H), 4.23 (dd, 2 H), 4.06-1.16 (br.s, 1 H), 3.92-4.02 (br.s, 1 H), 1.71-2.05 (m, 8 H), 1.47 (t, 3 H).

Example 115

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(methylthio)benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-methylthiobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 426 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.79 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 8.06 (d, 1 H), 7.93 (d, 1 H), 7.77-7.87 (m, 3 H), 7.30-7.36 (m, 3 H), 6.99 (d, 1 H), 3.90-4.00 (br,s, 1 H), 2.52 (s, 3 H), 1.68-2.06 (m, 8 H).

Example 116

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-4-methoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-fluoro-4-methoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 428 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.72-8.78 (br,s, 1 H), 8.70 (d, 1 H), 8.56 (d, 1 H), 8.04 (d, 1 H), 7.92 (s, 1 H), 7.72-7.83 (m, 3 H), 7.25 (t, 1 H), 6.98 (d, 1 H), 3.93-4.02 (br,s, 2 H), 3.90 (s, 3 H), 1.68-2.06 (m, 8 H).

Example 117

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-naphthamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-naphtoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 430 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.80-8.85 (s, 1 H), 8.72 (d, 1 H), 8.61 (s, 1 H), 8.57 (d, 1 H), 8.49 (s, 1 H), 8.29 (d, 1 H), 8.12 (d, 1 H), 8.01 (m, 2 H), 7.93 (d, 1 H), 7.81 (dd, 1 H), 7.63 (m, 2 H), 7.01 (d, 1 H), 4.03 (m, 2 H), 1.67-2.16 (m, 8 H).

Example 118

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-naphthamide

The titled compound was prepared according to the methods described in Example 23, substituting 1-naphtoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 430 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.73-8.79 (br,s, 1 H), 8.68 (d, 1 H), 8.56 (d, 1 H), 8.42 (d, 1 H), 8.16 (d, 1 H), 8.02 (d, 1 H), 7.99 (d, 1 H), 7.91 (d, 1 H), 7.77 (dd, 1 H), 7.52-7.66 (m, 4 H), 6.99 (d, 1 H), 4.14 (br,s, 1 H), 3.97 (br,s, 1 H), 3.97 (m, 8 H).

Example 119*cis*-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-chloro-2-hydroxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 430 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 12.40 (s, 1 H), 8.68 (m, 2 H), 8.56 (d, 1 H), 8.03 (d, 1 H), 7.91 (d, 1 H), 7.79 (d, 1 H), 7.45 (d, 1 H), 6.98 (m, 2 H), 3.90-4.14 (m, 2 H), 1.66-2.07 (m, 8 H).

Example 121*cis*-4-(acetylamino)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-acetylaminobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 437 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 10.15 (s, 1 H), 8.81 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 7.96 (d, 1 H), 7.93 (d, 1 H), 7.77-7.82 (m, 3 H), 7.64-7.66 (m, 2 H), 7.00 (d, 1 H), 4.88 (t, 1 H), 4.05 (t, 1 H), 2.07 (s, 3 H), 1.64-2.07 (m, 8 H).

Example 122*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-isopropoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-isopropoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 438 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.80 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 7.92-7.94 (m, 2 H), 7.80-7.89 (m, 3 H), 6.93-7.02 (m, 4 H), 4.69 (m, 1 H), 3.99 (br.s, 1 H), 1.64-2.06 (m, 8 H), 1.28 (d, 6 H).

Example 123*cis*-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-chloro-2-methoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 444 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.87 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.19 (d, 1 H), 7.95 (d, 1 H), 7.80 (dd, 1 H), 7.70 (d, 1 H), 7.54

(dd, 1 H), 7.23 (d, 1 H), 7.01 (d, 1 H), 4.09 (br.s, 1 H), 3.96 (s, 3 H), 3.96 (br.s, 1 H), 1.73-2.02 (m, 8 H).

Example 124

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluoro-1-naphthamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-fluoro-1-naphthoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 448 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.71 (br.s, 1 H), 8.67 (d, 1 H), 8.55 (d, 1 H), 8.44 (d, 1 H), 8.25 (m, 1 H), 8.13 (m, 1 H), 7.91 (d, 1 H), 7.77 (dd, 1 H), 7.70 (m, 2 H), 7.64 (dd, 1 H), 7.41 (t, 1 H), 6.98 (d, 1 H), 4.13 (br.s, 1 H), 3.96 (br.s, 1 H), 1.75-2.12 (m, 8 H).

Example 125

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-diethoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3,4-diethoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 468 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 7.93 (s, 1 H), 7.91 (s, 1 H), 7.81 (dd, 1 H), 7.48-7.55 (m, 2 H), 7.40-7.46 (m, 2 H), 6.96-7.05 (m, 2 H), 4.02-4.12 (m, 4 H), 1.64-2.06 (m, 8 H), 1.28-1.39 (m, 6 H).

Example 126

cis-2-benzyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-benzylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 470 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.80 (d, 1 H), 8.70 (d, 1 H), 8.55 (d, 1 H), 8.19 (d, 1 H), 7.92 (s, 1 H), 7.80 (d, 1 H), 7.37 (m, 3 H), 7.24 (m, 6 H), 6.98 (d, 1 H), 4.12 (s, 2 H), 3.97 (m, 2 H), 1.65-1.96 (m, 8 H).

Example 127

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(2-phenylethyl)benzamide

The titled compound was prepared according to the methods described in Example

23, substituting 2-benzylcarboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 484 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81 (d, 1 H), 8.70 (d, 1 H), 8.55 (d, 1 H), 8.22 (d, 1 H), 7.97 (d, 1 H), 7.77 (dd, 1 H), 7.33-7.40 (m, 2 H), 7.24-7.30 (m, 4 H), 7.20-7.23 (m, 2 H), 7.16 (t, 1 H), 6.98 (d, 1 H), 4.06 (br.s, 1 H), 3.94 (br.s, 1 H), 2.99 (m, 2 H), 2.84 (m, 2 H), 1.72-2.05 (m, 8 H).

Example 128

cis-2-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-bromo-5-methoxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 490 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.70 (d, 1 H), 8.54 (d, 1 H), 8.33 (d, 1 H), 7.91 (d, 1 H), 7.77 (dd, 1 H), 7.59 (d, 1 H), 7.53 (d, 1 H), 7.26 (d, 1 H), 7.03 (dd, 1 H), 6.96 (d, 1 H), 3.85-4.05 (m, 2 H), 3.79 (s, 3 H), 1.70-2.03 (m, 8 H).

Example 129

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-methylbenzoyl)benzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-(4-methylbenzoyl)benzoic acid for indole-6-carboxylic acid. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81 (d, 1 H), 8.78 (d, 1 H), 8.73 (d, 1 H), 8.55 (dd, 2 H), 8.49 (d, 1 H), 8.31 (d, 1 H), 7.95 (d, 1 H), 7.92 (dd, 1 H), 7.68-7.75 (m, 4 H), 7.38 (d, 1 H), 6.85 (d, 1 H), 3.20-3.56 (br.s, 2 H), 2.36 (s, 3 H), 1.40-2.14 (m, 8 H).

Example 130

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-iodobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-iodobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 506 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.70 (d, 1 H), 8.54 (d, 1 H), 8.32 (d, 1 H), 7.91 (d, 1 H), 7.88 (d, 1 H), 7.77 (dd, 1 H), 7.39-7.52 (m, 2 H), 7.33 (dd, 1 H), 7.17 (td, 1 H), 6.95 (d, 1 H), 4.00 (br.s, 1 H), 3.91 (br.s, 1 H), 1.68-2.03 (m, 8 H).

Example 131cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-iodobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-iodobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 506 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 8.21-8.27 (m, 2 H), 7.99 (d, 1 H), 7.89 (t, 1 H), 7.81 (dd, 1 H), 7.24-7.36 (m, 2 H), 6.99 (d, 1 H), 3.93-4.03 (br.s, 2 H), 1.67-2.07 (m, 8 H).

Example 132cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-iodobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-iodobenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 506 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.83 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1 H), 8.20 (d, 1 H), 7.93 (d, 1 H), 7.86 (d, 2 H), 7.81 (dd, 1 H), 7.67 (d, 2 H), 7.00 (d, 1 H), 3.89-4.04 (br.s, 2 H), 1.68-2.05 (m, 8 H).

Example 133cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-fluorophenyl)acetamide

A solution of N-(7-chloroquinolin-4-yl)-cyclohexane-1,4-diamine (20 mg, 0.07 mmol) in dichloromethane (1.0 mL) and triethylamine (0.01 mL) at 20°C was treated with (4-fluoro-phenyl)-acetyl chloride (12mg, 0.07 mmol). The reaction was shaken at room temperature for 18 hours then concentrated. The crude compound was purified by reverse phase HPLC to provide the desired compound. MS (ESI (+)) m/e 412 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, 1 H), 8.74 (d, 1 H), 8.54 (d, 1 H), 8.01 (d, 1 H), 7.95 (m, 1 H), 7.80 (dd, 1 H), 7.31 (m, 2 H), 7.12 (m, 2 H), 6.97 (d, 1 H), 3.91 (br.s, 1 H), 3.80 (br.s, 1 H), 3.47 (s, 2 H), 1.57-1.98 (m, 8 H).

Example 134cis-bis-3-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1-(4-fluorophenyl)propan-1-one

3-Chloro-4-fluoropropiophenone (13 mg, 0.07 mmol) was treated with a solution of

sodium iodide (0.07 mmol) in acetonitrile (0.5mL). A solution of N-(7-chloroquinolin-4-yl)-cyclohexane-1,4-diamine (20 mg, 0.07 mmol) in acetonitrile (0.5 mL) was added followed by potassium carbonate (20 mg, 0.14 mmol). The reaction was heated to 75 C for 18 hours then filtered and concentrated. The crude compound was purified by reverse phase HPLC to provide the desired compound. MS (ESI (+)) m/e 576 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 9.96 (br.s, 1 H), 8.78 (d, 1 H), 8.62 (d, 1 H), 8.54 (m, 1 H), 7.97 (d, 1 H), 7.79 (dd, 1 H), 7.49 (m, 2 H), 7.34 (m, 2 H), 7.07 (t, 2 H), 6.94 (m, 3 H), 5.66 (br.s, 1 H), 4.54 (m, 1 H), 4.19 (br.s, 1 H), 3.47-3.72 (m, 5 H), 1.79-2.23 (m, 10 H).

Example 135

cis-5-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1-(4-fluorophenyl)pentan-1-one

The titled compound was prepared according to the method described in Example 134 by substituting 4-(fluorophenyl)-5-chloro-1-oxopentane for 3-Chloro-4-fluoropropiophenone. MS (ESI (+)) m/e 454 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.74 (d, 1 H), 8.58 (m, 2 H), 8.45 (br.s, 2 H), 8.07 (m, 2 H), 7.97 (d, 1 H), 7.79 (dd, 1 H), 7.36 (t, 2 H), 6.94 (d, 1 H), 4.07 (br.s, 1 H), 3.23 (m, 2 H), 3.10 (m, 2 H), 2.99 (br.s, 2 H), 2.03 (m, 2 H), 1.74-1.96 (m, 5 H), 1.69 (m, 4 H).

Example 136

cis-N-(4,4-bis(4-fluorophenyl)butyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 134 by substituting 1,1'-(4-chlorobutylidene) bis(4-fluorobenzene) for 3-Chloro-4-fluoropropiophenone. MS (ESI (+)) m/e 520 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.72 (d, 1 H), 8.59 (d, 1 H), 8.51 (br.s, 1 H), 8.37 (br.s, 2 H), 7.96 (d, 1 H), 7.77 (dd, 1 H), 7.35 (m, 4 H), 7.14 (m, 4 H), 6.92 (d, 1 H), 4.04 (m, 2 H), 3.17 (br.s, 1 H), 2.97 (m, 2 H), 2.05 (m, 4 H), 1.71-1.92 (m, 5 H), 1.50 (m, 2 H).

Example 137

cis-N-(7-chloroquinolin-4-yl)-N'-(4-phenylbutyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 134 by substituting 1-chloro-4-phenyl butane for 3-Chloro-4-fluoropropiophenone. MS (ESI (+)) m/e 408 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.74 (d, 1 H), 8.59 (d, 1 H), 8.56 (m, 1 H), 8.44 (br.s, 2 H), 7.97 (d, 1 H), 7.78 (dd, 1 H), 7.30 (m, 2 H), 7.20 (m, 3 H), 6.93 (d, 1

H), 4.06 (m, 1 H), 3.20 (br.s, 1 H), 2.98 (br.s, 2 H), 2.62 (t, 2 H), 2.04 (m, 2 H), 1.73-1.94 (m, 6 H), 1.62 (m, 4 H).

Example 138

cis-N-(7-chloroquinolin-4-yl)-N'-(5-phenylpentyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 134 by substituting 1-chloro-5-phenyl pentane for 3-Chloro-4-fluoropropiophenone. MS (ESI (+)) m/e 422 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.74 (d, 1 H), 8.60 (d, 2 H), 8.46 (br.s, 2 H), 7.97 (d, 1 H), 7.78 (dd, 1 H), 7.28 (m, 2 H), 7.19 (m, 3 H), 6.94 (d, 1 H), 4.08 (m, 1 H), 3.23 (br.s, 1 H), 2.95 (br.s, 1 H), 2.59 (t, 2 H), 2.04 (m, 2 H), 1.72-1.95 (m, 6 H), 1.63 (m, 4 H), 1.36 (m, 2 H).

Example 139

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-difluorobenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 23, substituting 3,5-difluorobenzaldehyde for 6-formylindole. MS (ESI(+)) Q1MS m/z 402 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 8.75 (d, 1 H), 8.67 (d, 1 H), 8.61 (d, 1 H), 7.98 (d, 1 H), 7.80 (dd, 1 H), 7.24-7.42 (m, 4 H), 6.96 (d, 1 H), 4.26 (br.s, 1 H), 4.08 (br.s, 1 H), 2.07 (s, 2 H), 1.73-2.16 (m, 8 H).

Example 140

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-difluorophenyl)cyclohexane-1,4-diamine

A mixture of example 23A (30mg, 0.11mmol), 1-bromo-3,5-difluorobenzene (25mg, 0.132mmol), Pd₂(dba)₃ (1mg, .001 mmol), 2,2'-bis(diphenylphosphino)-1,1'-binaphthyl (1.6mg, .002mmol) and sodium-tert-butoxide (14mg, 0.132 mmol) was heated for 15 hours in ethyleneglycoldimethylether, concentrated and the residue was purified with high throughput HPLC system to provide the desired compound as its bis trifluoroacetic acid salt. MS (ESI(+)) Q1MS m/z 388 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 8.91 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.01 (d, 1 H), 6.25 (m, 4 H), 3.86-4.10 (br.s, 1 H), 3.54 (br.s, 1 H), 3.54 (m, 8 H).

Example 141

cis-N-(7-chloroquinolin-4-yl)-N'-(3-fluorobenzyl)cyclohexane-1,4-diamine

To 4-fluorobenzyl alcohol (9.2 mg, 0.073 mmol) was added Dess-Martin periodinane (31.0 mg, 0.073 mmol) in dichloromethane (2mL). The mixture was stirred at room temperature for 0.5 hour and was added to a mixture of N-(7-chloroquinolin-4-yl)-cyclohexane-1,4-diamine (20 mg, 0.073 mmol), acetic acid (0.008 mg, 0.13 mmol) and MP-cyanoborohydride (51 mg, 0.219 mmol, Argonaut Technologies) in dichloromethane (5 mL). The mixture was stirred at room temperature for 18 hours, filtered and concentrated under reduced pressure to provide the $\tau\tau\lambda\epsilon\delta$ compound. MS(ESI) m/e 384 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.91 (br.s, 2 H), 8.75 (d, 1 H), 8.61 (d, 1 H), 7.97 (d, 1 H), 7.81 (dd, 1 H), 7.52 (dd, 1 H), 7.42 (d, 1 H), 7.37 (d, 1 H), 7.29 (td, 1 H), 4.25 (br.s, 2 H), 4.09 (br.s, 2 H), 1.76-2.13 (m, 8 H).

Example 142

cis-N-(3-chlorobenzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3-chlorobenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 394 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.85 (br.s, 2 H), 8.73 (d, 1 H), 8.60 (d, 1 H), 7.96 (d, 1 H), 7.82 (dd, 1 H), 7.65 (s, 1 H), 7.51 (m, 3 H), 6.93 (d, 1 H), 4.24 (s, 2 H), 4.07 (s, 2 H), 1.71-2.15 (m, 8 H).

Example 143

cis-N-(4-chlorobenzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 4-chlorobenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 399 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.86 (br. s, 2 H), 8.73 (d, 1 H), 8.60 (d, 1 H), 7.96 (d, 1 H), 7.80 (d, 1 H), 7.42-7.67 (m, 4 H), 6.93 (d, 1 H), 4.22 (s, 2 H), 4.07 (s, 2 H), 1.71-2.15 (m, 8 H).

Example 144

cis-N-(7-chloroquinolin-4-yl)-N'-(3-(trifluoromethyl)benzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3-(trifluoromethyl)benzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 434

(M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81-9.05 (br.s, 2 H), 8.75 (d, 1 H), 8.61 (d, 1 H), 7.96 (d, 1 H), 7.82 (m, 4 H), 7.71 (d, 1 H), 6.95 (d, 1 H), 4.20-4.44 (br.s, 2 H), 4.09 (br.s, 2 H), 1.71-2.33 (m, 8 H).

Example 145

cis-N-(7-chloroquinolin-4-yl)-N'-(4-(trifluoromethyl)benzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 4-(trifluoromethyl)benzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 434 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.84-9.06 (br.s, 2 H), 8.73 (d, 1 H), 8.60 (d, 1 H), 7.96 (d, 1 H), 7.87 (m, 2 H), 7.73 (m, 3 H), 6.93 (d, 1 H), 4.32 (d, 2 H), 4.07 (s, 2 H), 1.60-2.18 (m, 8 H).

Example 146

cis-N-(7-chloroquinolin-4-yl)-N'-(4-phenoxybenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 4-phenoxybenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 458 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.89 (br.s, 2 H), 8.73 (d, 1 H), 8.60 (d, 1 H), 8.54 (br.s, 1 H), 7.96 (d, 1 H), 7.81 (dd, 1 H), 7.48 (t, 1 H), 7.42 (t, 2 H), 7.29 (d, 1 H), 7.24 (s, 1 H), 7.18 (t, 1 H), 7.06 (m, 3 H), 6.93 (d, 1 H), 4.21 (br.s, 2 H), 4.07 (s, 2 H), 1.73-2.14 (m, 8 H).

Example 147

cis-N-(4-(benzyloxy)benzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 4-benzyloxybenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 472 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.72 (m, 2 H), 8.60 (d, 1 H), 7.96 (d, 1 H), 7.80 (dd, 1 H), 7.39 (m, 6 H), 7.09 (d, 2 H), 6.91 (d, 1 H), 5.15 (s, 2 H), 3.97-4.25 (m, 2 H), 3.08-3.43 (m, 3 H), 1.70-2.16 (m, 8 H).

Example 148

cis-N-(7-chloroquinolin-4-yl)-N'-(2,4-dimethylbenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 2,4-dimethylbenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 394 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.74 (d, 1 H), 8.61 (d, 1 H), 7.96 (d, 1 H), 7.82 (dd, 1 H), 7.33 (br.s, 2 H), 7.33 (m, 1 H), 7.08 (m, 2 H), 6.94 (d, 1 H), 3.92-4.34 (m, 4 H), 2.35 (s, 3 H), 2.29 (s, 3 H), 1.72-2.18 (m, 8 H).

Example 149

cis-N-(7-chloroquinolin-4-yl)-N'-(2,5-dimethylbenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 2,5-dimethylbenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 394 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.74 (d, 1 H), 8.74 (br.s, 2 H), 8.61 (d, 1 H), 8.53 (br.s, 1 H), 7.97 (d, 1 H), 7.80 (dd, 1 H), 7.28 (m, 1 H), 7.18 (m, 2 H), 6.93 (d, 1 H), 4.03-4.27 (m, 2 H), 2.33 (s, 3 H), 2.30 (s, 3 H), 1.73-2.22 (m, 8 H).

Example 150

cis-N-(7-chloroquinolin-4-yl)-N'-(3,4-dimethylbenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3,4-dimethylbenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 394 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.79 (br.s, 2 H), 8.74 (d, 1 H), 8.60 (d, 1 H), 8.58 (br.s, 1 H), 8.58 (m, 10 H), 7.97 (s, 1 H), 7.80 (d, 1 H), 7.25 (m, 3 H), 6.93 (d, 1 H), 3.98-4.24 (m, 4 H), 2.24 (s, 3 H), 2.24 (s, 3 H), 1.73-2.22 (m, 8 H).

Example 151

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-dimethylbenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3,5-dimethylbenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 394 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.74 (br.s, 2 H), 8.73 (d, 1 H), 8.60 (d, 1 H), 8.55 (br.s, 1 H), 7.96 (d, 1 H), 7.81 (dd, 1 H), 7.12 (s, 1 H), 7.08 (d, 2 H), 6.93 (d, 1 H), 3.98-4.19 (m, 4 H), 2.49 (s, 3 H), 2.30 (s, 3 H), 1.69-2.16 (m, 8 H).

Example 152*cis*-N-(7-chloroquinolin-4-yl)-N'-(3,5-dimethoxybenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3,5-dimethoxybenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 426 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.85 (br.s, 2 H), 8.73 (d, 1 H), 8.60 (d, 1 H), 8.51 (br.s, 1 H), 7.96 (s, 1 H), 7.80 (dd, 1 H), 6.92 (d, 1 H), 6.72 (d, 2 H), 6.57 (m, 1 H), 4.01-4.29 (m, 2 H), 3.77 (s, 6 H), 1.70-2.15 (m, 8 H).

Example 153*cis*-N-(1,3-benzodioxol-5-ylmethyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3,4-methylenedioxybenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 410 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.73 (d, 1 H), 8.73 (br.s, 2 H), 8.60 (d, 1 H), 8.51 (br.s, 1 H), 7.96 (d, 1 H), 7.81 (d, 1 H), 7.10 (s, 1 H), 7.00 (s, 2 H), 6.92 (d, 1 H), 6.06 (s, 2 H), 3.96-4.24 (m, 4 H), 1.72-2.14 (m, 8 H).

Example 154*cis*-N-(7-chloroquinolin-4-yl)-N'-(3,4,5-trimethoxybenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3,4,5-trimethoxybenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 456 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.87 (br.s, 2 H), 8.75 (d, 1 H), 8.61 (d, 1 H), 8.60 (br.s, 1 H), 7.97 (d, 1 H), 7.81 (dd, 1 H), 6.95 (d, 1 H), 6.87 (m, 2 H), 3.99-4.26 (m, 2 H), 3.80 (s, 6 H), 3.67 (s, 3 H), 1.70-2.15 (m, 8 H).

Example 155*cis*-N-(7-chloroquinolin-4-yl)-N'-(2,3-dichlorobenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 2,3-dichlorobenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 436 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.84-9.08 (br.s, 2 H), 8.75 (d, 1 H), 8.61 (d, 1 H), 8.60 (br.s, 1 H), 7.97 (d, 1 H), 7.81 (d, 1 H), 7.76 (d, 1 H), 7.63 (m, 1 H), 7.50 (m, 1 H), 6.95 (d, 1 H), 4.37 (s, 2 H), 1.72-2.22 (m, 8 H).

Example 156

cis-N-(7-chloroquinolin-4-yl)-N'-(2,4-dichlorobenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 2,4-dichlorobenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) *m/e* 436 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.73 (d, 1 H), 8.60 (d, 1 H), 8.56 (br.s, 1 H), 7.95 (s, 1 H), 7.80 (m, 1 H), 7.68 (m, 2 H), 7.59 (m, 1 H), 6.93 (d, 1 H), 4.03-4.50 (br.s, 2 H), 4.03-4.50 (m, 2 H), 1.70-2.32 (m, 8 H).

Example 157

cis-N-(7-chloroquinolin-4-yl)-N'-(2,5-dichlorobenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 2,5-dichlorobenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) *m/e* 434 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.78-9.11 (br.s, 2 H), 8.74 (d, 1 H), 8.60 (d, 1 H), 8.59 (br.s, 1 H), 7.96 (d, 1 H), 7.80 (m, 2 H), 7.60 (m, 2 H), 6.94 (d, 1 H), 3.99-4.47 (m, 2 H), 1.73-2.31 (m, 8 H).

Example 158

cis-N-(7-chloroquinolin-4-yl)-N'-(3,4-dichlorobenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3,4-dichlorobenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) *m/e* 434 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.81 (br.s, 2 H), 8.69 (br.s, 1 H), 8.58 (d, 1 H), 7.98 (d, 1 H), 7.94 (s, 1 H), 7.68-7.88 (m, 3 H), 7.49 (m, 2 H), 3.86-4.41 (m, 2 H), 1.62-2.24 (m, 8 H).

Example 159

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-dichlorobenzyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3,5-dichlorobenzyl alcohol for 4-fluorobenzyl alcohol. MS(ESI) *m/e* 434 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.85 (br.s, 2 H), 8.73 (d, 1 H), 8.61 (d, 1

H), 8.60 (br.s, 1 H), 7.96 (d, 1 H), 7.82 (dd, 1 H), 7.72 (s, 1 H), 7.62 (d, 2 H), 6.94 (d, 1 H), 4.01-4.41 (m, 2 H), 1.73-2.28 (m, 8 H).

Example 160

cis-N-(7-chloroquinolin-4-yl)-N'-phenylcyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting bromobenzene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS *m/z* 352 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 8.90 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.91 (s, 1 H), 7.80 (dd, 1 H), 7.08 (t, 2 H), 7.00 (d, 1 H), 6.63 (d, 1 H), 6.52 (t, 1 H), 3.87-4.08 (br.s, 2 H), 1.66-2.16 (m, 8 H).

Example 161

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}propane-1-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 1-propanesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 382 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.73 (m, 2 H), 8.52 (d, 1 H), 7.91 (d, 1 H), 7.78 (dd, 1 H), 6.93 (m, 2 H), 3.89 (br.s, 1 H), 3.49 (m, 1 H), 3.02 (m, 2 H), 1.89 (m, 4 H), 1.71 (m, 6 H), 1.00 (t, 3 H).

Example 162

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}butane-1-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 1-butan sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 396 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (m, 1 H), 8.70 (d, 1 H), 8.53 (d, 1 H), 7.91 (d, 1 H), 7.79 (dd, 1 H), 6.95 (d, 1 H), 6.91 (d, 1 H), 3.90 (m, 1 H), 3.49 (m, 1 H), 3.04 (m, 2 H), 1.89 (m, 4 H), 1.59-1.80 (m, 6 H), 1.42 (m, 2 H), 0.90 (t, 3 H).

Example 163

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting benzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI

(+) m/e 416 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.83 (m, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.91 (d, 1 H), 7.87 (m, 2 H), 7.79 (dd, 1 H), 7.64 (m, 3 H), 7.56 (d, 1 H), 6.93 (d, 1 H), 3.86 (m, 1 H), 3.12 (m, 1 H), 1.89 (m, 2 H), 1.74 (m, 4 H), 1.57 (m, 2 H).

Example 164

cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-chloro-4-fluorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 468 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.76 (m, 1 H), 8.72 (d, 1 H), 8.52 (d, 1 H), 8.07 (m, 1 H), 7.92 (d, 1 H), 7.87 (d, 1 H), 7.80 (dd, 1 H), 7.72 (dd, 1 H), 7.44 (td, 1 H), 6.91 (d, 1 H), 3.85 (m, 1 H), 1.90 (m, 2 H), 1.75 (m, 4 H), 1.58 (m, 2 H).

Example 165

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-thiophenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 422 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (m, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.94 (dd, 1 H), 7.91 (d, 1 H), 7.78 (m, 2 H), 7.63 (dd, 1 H), 7.21 (m, 1 H), 6.93 (d, 1 H), 3.87 (m, 1 H), 1.87 (m, 4 H), 1.73 (m, 2 H), 1.62 (m, 2 H).

Example 166

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(trifluoromethoxy)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-(trifluoromethoxy)benzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 500 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (d, 1 H), 8.71 (d, 1 H), 8.52 (d, 1 H), 7.97 (dd, 1 H), 7.92 (d, 1 H), 7.79 (m, 3 H), 7.59 (t, 2 H), 6.92 (d, 1 H), 3.87 (m, 1 H), 1.87 (m, 4 H), 1.73 (m, 2 H), 1.62 (m, 2 H).

Example 167

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting *m*-tolylsulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 430 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, 1 H), 8.71 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.68 (m, 2 H), 7.47 (m, 3 H), 6.94 (d, 1 H), 3.86 (m, 1 H), 3.13 (m, 1 H), 2.41 (s, 3 H), 1.90 (m, 2 H), 1.75 (m, 4 H), 1.57 (m, 2 H).

Example 168

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting *p*-tolylsulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 430 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, 1 H), 8.71 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 7.74 (d, 2 H), 7.46 (d, 1 H), 7.41 (d, 2 H), 6.93 (d, 1 H), 3.85 (m, 1 H), 3.10 (m, 1 H), 2.39 (s, 3 H), 1.89 (m, 2 H), 1.75 (m, 4 H), 1.56 (m, 2 H).

Example 169

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-fluorobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-fluorobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 434 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (m, 1 H), 8.71 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.87 (m, 2 H), 7.79 (dd, 1 H), 7.72 (m, 1 H), 7.44 (m, 2 H), 6.92 (d, 1 H), 3.85 (m, 1 H), 1.91 (m, 2 H), 1.76 (m, 4 H), 1.60 (m, 2 H).

Example 170

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluorobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-fluorobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 434 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.68 (m, 4 H), 7.54 (m, 1 H), 6.94 (d, 1 H), 3.86 (m, 1 H), 3.19 (m, 1 H), 1.88 (m, 2 H), 1.75 (m, 4 H), 1.58 (m, 2 H).

Example 171*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-fluorobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 434 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.93 (m, 3 H), 7.79 (dd, 1 H), 7.60 (d, 1 H), 7.46 (t, 2 H), 6.93 (d, 1 H), 3.86 (m, 1 H), 3.14 (m, 1 H), 1.88 (m, 2 H), 1.75 (m, 4 H), 1.58 (m, 2 H).

Example 172*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyanobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-cyanobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 441 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, 1 H), 8.71 (d, 1 H), 8.52 (d, 1 H), 8.09 (m, 3 H), 7.94 (m, 2 H), 7.84 (td, 1 H), 7.80 (dd, 1 H), 6.93 (d, 1 H), 3.88 (m, 1 H), 3.41 (m, 1 H), 1.87 (m, 4 H), 1.73 (m, 2 H), 1.65 (m, 2 H).

Example 173*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-cyanobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-cyanobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 441 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 8.27 (t, 1 H), 7.92 (d, 1 H), 7.82 (m, 3 H), 6.94 (d, 1 H), 3.88 (m, 1 H), 3.21 (m, 1 H), 1.88 (m, 2 H), 1.75 (m, 4 H), 1.65 (m, 2 H), 1.59 (m, 2 H).

Example 174*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-cyanobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-cyanobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 441 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (d, 1 H), 8.69 (d, 1 H), 8.51 (d, 1 H), 8.11 (d, 2 H), 8.03 (d, 2 H), 7.91 (d, 1 H), 7.88 (d, 1 H), 7.79 (dd, 1 H), 6.93 (d, 1 H), 3.87 (m, 1 H), 3.20 (m, 1 H), 1.87 (m, 2 H), 1.74 (m, 4 H), 1.59 (m, 2 H).

Example 175

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting p-xylene-2-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 444 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.76 (d, 1 H), 8.71 (d, 1 H), 8.51 (d, 1 H), 7.91 (d, 1 H), 7.79 (dd, 1 H), 7.68 (s, 1 H), 7.54 (d, 1 H), 7.31 (m, 2 H), 6.90 (d, 1 H), 3.83 (m, 1 H), 3.20 (m, 1 H), 2.57 (s, 3 H), 2.34 (s, 3 H), 1.88 (m, 2 H), 1.73 (m, 4 H), 1.54 (m, 2 H).

Example 176

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methoxybenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-methoxybenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 446 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.54 (m, 2 H), 7.44 (m, 1 H), 7.39 (m, 1 H), 7.22 (m, 1 H), 6.93 (d, 1 H), 3.86 (m, 4 H), 3.13 (m, 1 H), 1.90 (m, 2 H), 1.75 (m, 4 H), 1.57 (m, 2 H).

Example 177

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methoxybenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-methoxybenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 446 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.79 (m, 3 H), 7.38 (d, 1 H), 7.13 (d, 2 H), 6.93 (d, 1 H), 3.86 (m, 4 H), 3.08 (m, 1 H), 1.89 (m, 2 H), 1.75 (m, 4 H), 1.56 (m, 2 H).

Example 178

cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-chlorobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS

(ESI (+)) m/e 451 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, 1 H), 8.72 (d, 1 H), 8.52 (d, 1 H), 8.01 (d, 1 H), 7.92 (d, 1 H), 7.80 (m, 2 H), 7.67 (m, 2 H), 7.57 (m, 1 H), 6.92 (d, 1 H), 3.85 (m, 1 H), 1.91 (m, 2 H), 1.75 (m, 4 H), 1.59 (m, 2 H).

Example 179

cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-dimethylphenyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 5-bromo-m-xylene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 380 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.87 (d, 1 H), 8.71 (d, 1 H), 8.54 (d, 1 H), 7.93 (d, 1 H), 7.79 (dd, 1 H), 6.99 (d, 1 H), 6.27 (s, 2 H), 6.20 (s, 1 H), 3.86-4.23 (m, 2 H), 2.15 (s, 6 H), 1.67-2.01 (m, 8 H).

Example 180

cis-N-(7-chloroquinolin-4-yl)-N'-(2-fluorophenyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 1-bromo-2-fluorobenzene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 370 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.84 (d, 1 H), 8.67 (d, 1 H), 8.55 (d, 1 H), 7.93 (s, 1 H), 7.80 (dd, 1 H), 6.97-7.08 (m, 3 H), 6.81 (t, 1 H), 6.58 (dd, 1 H), 4.68-4.92 (br.s, 1 H), 4.01 (br.s, 1 H), 3.66 (s, 1 H), 1.68-2.02 (m, 8 H).

Example 181

cis-N-(7-chloroquinolin-4-yl)-N'-(3-fluorophenyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 1-bromo-3-fluorobenzene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 370 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.91 (d, 1 H), 8.72 (d, 1 H), 8.54 (d, 1 H), 7.93 (d, 1 H), 7.79 (dd, 1 H), 6.97-7.07 (m, 3 H), 6.47 (d, 1 H), 6.40 (d, 1 H), 6.28 (t, 1 H), 3.96 (m, 2 H), 1.70-1.98 (m, 8 H).

Example 182

cis-N-(7-chloroquinolin-4-yl)-N'-2-naphthylcyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example

140, substituting 2-bromonaphthalene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 402 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.93 (d, 1 H), 8.73 (d, 1 H), 8.55 (d, 1 H), 7.94 (d, 1 H), 7.79 (dd, 1 H), 7.54-7.65 (m, 3 H), 7.30 (t, 1 H), 7.06-7.13 (m, 2 H), 7.02 (d, 1 H), 6.77 (d, 1 H), 5.75-5.95 (br.s., 1 H), 4.01 (s, 1 H), 3.69 (s, 1 H), 1.72-2.12 (m, 8 H).

Example 183

cis-N-(7-chloroquinolin-4-yl)-N'-(3-fluoro-4-methylphenyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 4-bromo-2-fluorotoluene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 384 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.89 (d, 1 H), 8.71 (d, 1 H), 8.54 (d, 1 H), 7.93 (d, 1 H), 7.79 (dd, 1 H), 7.00 (d, 1 H), 6.94 (t, 1 H), 6.35-6.41 (m, 2 H), 5.50-5.70 (br.s., 1 H), 3.96 (s, 1 H), 3.50 (s, 1 H), 2.06 (s, 3 H), 1.67-1.97 (m, 8 H).

Example 184

cis-N-(7-chloroquinolin-4-yl)-N'-1-naphthylcyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 1-bromotoluene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 402 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.90 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.27 (d, 1 H), 7.94 (d, 1 H), 7.73-7.83 (m, 2 H), 7.44 (m, 1 H), 7.31 (t, 1 H), 7.14 (d, 1 H), 7.03 (d, 1 H), 6.62 (d, 1 H), 5.61 (s, 1 H), 5.41-5.76 (br.s., 1 H), 4.03 (s, 1 H), 3.80 (s, 1 H), 1.69-2.26 (m, 8 H).

Example 185

cis-3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-chlorobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI(+)) m/e 451 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 7.92 (d, 1 H), 7.89 (t, 1 H), 7.75 (m, 1 H), 7.71 (d, 1 H), 7.66 (t, 1 H), 6.94 (d, 1 H), 3.85 (m, 1 H), 3.85 (m, 2 H), 3.17 (m, 1 H), 1.88 (m, 2 H), 1.75 (m, 4 H), 1.58 (m, 2 H).

Example 186*cis*-4-(2-chloro-6-nitrophenoxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2'-chloro-6'-nitro-4-phenoxybenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 589 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 8.18 (dd, 1 H), 8.08 (dd, 1 H), 7.92 (d, 1 H), 7.85 (d, 2 H), 7.79 (dd, 1 H), 7.65 (t, 1 H), 7.55 (d, 1 H), 7.12 (d, 2 H), 6.94 (d, 1 H), 3.83 (m, 1 H), 3.15 (m, 1 H), 1.89 (m, 2 H), 1.75 (m, 4 H), 1.56 (m, 2 H).

Example 187*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-difluorobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,4-difluorobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 452 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, 1 H), 8.71 (d, 1 H), 8.52 (d, 1 H), 7.92 (m, 3 H), 7.79 (dd, 1 H), 7.55 (m, 1 H), 7.31 (m, 1 H), 6.92 (d, 1 H), 3.87 (m, 1 H), 1.90 (m, 2 H), 1.76 (m, 4 H), 1.61 (m, 2 H).

Example 188*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-difluorobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3,4-difluorobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 452 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (m, 1 H), 8.69 (d, 1 H), 8.52 (d, 1 H), 7.92 (m, 2 H), 7.79 (d, 1 H), 7.72 (m, 3 H), 6.94 (d, 1 H), 3.86 (m, 1 H), 3.18 (m, 1 H), 1.66-1.94 (m, 6 H), 1.57 (m, 2 H).

Example 189*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-propylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-n-propylbenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 458 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.91 (d, 1 H), 7.77 (m, 3 H), 7.47 (d, 1 H), 7.42 (d, 2 H), 6.92 (d, 1 H),

3.84 (m, 1 H), 3.12 (m, 1 H), 2.65 (m, 2 H), 1.89 (m, 2 H), 1.75 (m, 4 H), 1.58 (m, 4 H), 0.89 (t, 3 H).

Example 190

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-isopropylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-isopropylbenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 458 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.91 (d, 1 H), 7.77 (m, 3 H), 7.48 (m, 3 H), 6.93 (d, 1 H), 3.85 (m, 1 H), 3.11 (m, 1 H), 3.00 (m, 1 H), 1.90 (m, 2 H), 1.64-1.84 (m, 4 H), 1.57 (m, 2 H), 1.23 (d, 6 H).

Example 191

cis-4-chloro-N-({5-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonyl}thien-2-yl)methyl)benzamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-((4-chloro-benzoylamino)-methyl)-thiophene-2-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 591 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 9.34 (t, 1 H), 8.87 (d, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 7.90 (m, 3 H), 7.79 (dd, 1 H), 7.70 (d, 1 H), 7.56 (m, 2 H), 7.47 (d, 1 H), 7.09 (d, 1 H), 6.94 (d, 1 H), 4.65 (m, 2 H), 3.87 (m, 1 H), 3.25 (m, 1 H), 1.85 (m, 4 H), 1.72 (m, 2 H), 1.61 (m, 2 H).

Example 192

cis-5-bromo-6-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}pyridine-3-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-bromo-6-chloro-pyridine-3-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 531 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, 1 H), 8.83 (d, 1 H), 8.70 (d, 1 H), 8.59 (d, 1 H), 8.53 (d, 1 H), 7.92 (m, 2 H), 7.81 (dd, 1 H), 6.97 (d, 1 H), 3.91 (m, 1 H), 1.71-1.93 (m, 6 H), 1.63 (m, 2 H).

Example 193

cis-4-tert-butyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-*t*-butylphenyl sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 474 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (d, 1 H), 8.70 (d, 1 H), 8.50 (d, 1 H), 7.91 (d, 1 H), 7.79 (m, 3 H), 7.63 (d, 2 H), 7.48 (d, 1 H), 6.92 (d, 1 H), 3.73-3.93 (m, 1 H), 3.09 (m, 1 H), 1.84-2.05 (m, 2 H), 1.64-1.84 (m, 4 H), 1.55 (m, 2 H), 1.31 (s, 9 H).

Example 194

cis-3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-chloro-4-fluorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 469 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (d, 1 H), 8.69 (d, 1 H), 8.52 (d, 1 H), 8.05 (dd, 1 H), 7.92 (d, 1 H), 7.88 (m, 1 H), 7.79 (dd, 1 H), 7.68 (m, 2 H), 6.94 (d, 1 H), 3.86 (m, 1 H), 3.18 (m, 1 H), 1.67-1.94 (m, 6 H), 1.59 (m, 2 H).

Example 195

cis-N-{4-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonyl}phenyl}acetamide

The titled compound was prepared according to the method described in Example 15 by substituting *N*-acetylsulfanilyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 473 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 10.30 (s, 1 H), 8.84 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.91 (d, 1 H), 7.78 (m, 5 H), 7.42 (d, 1 H), 6.93 (d, 1 H), 3.84 (m, 1 H), 3.10 (m, 1 H), 2.09 (s, 3 H), 1.89 (m, 2 H), 1.73 (m, 4 H), 1.55 (m, 2 H).

Example 196

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethoxybenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,5-dimethoxybenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 476 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.74 (d, *J* = 6.6 Hz, 1 H), 8.69 (d, *J* = 9.4 Hz, 1 H), 8.51 (d, *J* = 7.2 Hz, 1 H), 7.91 (d, *J* = 2.2 Hz, 1 H), 7.79 (dd, *J* = 9.0, 1.9 Hz, 1 H), 7.29 (m, 1 H), 7.20 (m, 2 H), 7.02 (d, *J* = 5.0 Hz, 1 H), 6.91 (d, *J* = 7.2 Hz, 1 H), 3.86 (m, 4 H), 3.76 (s, 3 H), 3.19 (m, 1 H), 1.92 (m, 2 H), 1.74 (m, 4 H), 1.55 (m, 2 H).

Example 197*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-dimethoxybenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3,4-dimethoxybenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 476 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.71 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.42 (dd, 1 H), 7.39 (d, 1 H), 7.36 (d, 1 H), 7.20 (m, 1 H), 7.13 (d, 1 H), 6.94 (d, 1 H), 3.84 (m, 7 H), 3.06 (m, 1 H), 1.91 (m, 2 H), 1.76 (m, 4 H), 1.55 (m, 2 H).

Example 198*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethyl)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-trifluoromethylbenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 484 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 8.18 (m, 2 H), 8.06 (d, 1 H), 7.90 (m, 2 H), 7.81 (m, 2 H), 6.95 (d, 1 H), 3.88 (m, 1 H), 3.18 (m, 1 H), 1.88 (m, 2 H), 1.76 (m, 4 H), 1.59 (m, 2 H).

Example 199*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethyl)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-trifluoromethylbenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 484 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, 1 H), 8.71 (d, 1 H), 8.52 (d, 1 H), 8.08 (d, 2 H), 8.02 (d, 2 H), 7.92 (d, 1 H), 7.84 (d, 1 H), 7.80 (dd, 1 H), 6.95 (d, 1 H), 3.84 (m, 1 H), 3.16 (m, 1 H), 1.91 (m, 2 H), 1.75 (m, 4 H), 1.48-1.69 (m, 2 H).

Example 200

cis-2,3-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,3-dichlorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 486 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (d, 1 H), 8.72 (d, 1 H), 8.52 (d, 1 H), 8.02 (m, 2 H), 7.95 (dd, 1 H), 7.92 (d, 1 H), 7.81 (dd, 1 H), 7.59 (t, 1 H), 6.92 (d, 1 H), 3.84 (m, 1 H), 1.92 (m, 2 H), 1.76 (m, 4 H), 1.60 (m, 2 H).

Example 201

cis-2,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,4-dichlorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 486 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (d, 1 H), 8.72 (d, 1 H), 8.52 (d, 1 H), 8.00 (d, 1 H), 7.94 (m, 2 H), 7.89 (d, 1 H), 7.80 (dd, 1 H), 7.66 (dd, 1 H), 6.92 (d, 1 H), 3.84 (m, 1 H), 1.91 (m, 2 H), 1.74 (m, 4 H), 1.59 (m, 2 H).

Example 202

cis-2,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,5-dichlorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 486 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (d, 1 H), 8.72 (d, 1 H), 8.52 (d, 1 H), 8.02 (d, 1 H), 7.97 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.74 (m, 2 H), 6.92 (d, 1 H), 3.86 (m, 1 H), 1.90 (m, 2 H), 1.76 (m, 4 H), 1.61 (m, 2 H).

Example 203

cis-3,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3,4-dichlorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 486 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 8.06 (d, 1 H), 7.92 (m, 2 H), 7.80 (m, 3 H), 6.95 (d, 1 H), 3.88 (m, 1 H), 3.21 (m, 1 H), 1.68-1.93 (m, 6 H), 1.60 (m, 2 H).

Example 204

cis-3,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3,5-dichlorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 486 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 7.92 (d, 1 H), 7.86 (d, 1 H), 7.86 (d, 2 H), 7.81 (m, 2 H), 6.96 (d, 1 H), 3.90 (m, 1 H), 3.23 (m, 1 H), 1.69-1.94 (m, 6 H), 1.61 (m, 2 H).

Example 205

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,1'-biphenyl-4-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-biphenyl sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 492 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, 1 H), 8.71 (d, 1 H), 8.51 (d, 1 H), 7.93 (m, 5 H), 7.80 (dd, 1 H), 7.75 (m, 2 H), 7.61 (d, 1 H), 7.52 (m, 2 H), 7.45 (m, 1 H), 6.94 (d, 1 H), 3.87 (m, 1 H), 3.18 (m, 1 H), 1.68-1.96 (m, 6 H), 1.60 (m, 2 H).

Example 206

cis-2-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-bromobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 496 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.73 (m, 2 H), 8.51 (d, 1 H), 8.04 (dd, 1 H), 7.92 (d, 1 H), 7.87 (dd, 1 H), 7.79 (dd, 1 H), 7.73 (d, 1 H), 7.58 (m, 2 H), 6.91 (d, 1 H), 3.83 (m, 1 H), 1.93 (m, 2 H), 1.75 (m, 4 H), 1.61 (m, 2 H).

Example 207

cis-3-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-bromobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 496 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 8.02 (t, 1 H), 7.92 (d, 1 H), 7.88 (m, 2 H), 7.80 (dd, 1 H), 7.70 (d, 1 H),

7.59 (t, 1 H), 6.95 (d, 1 H), 3.89 (m, 1 H), 3.18 (m, 1 H), 1.90 (m, 2 H), 1.76 (m, 4 H), 1.60 (m, 2 H).

Example 208

cis-4-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-bromobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 496 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, 1 H), 8.71 (d, 1 H), 8.52 (d, 1 H), 7.92 (d, 1 H), 7.85 (m, 2 H), 7.79 (m, 3 H), 7.67 (d, 1 H), 6.94 (d, 1 H), 3.86 (m, 1 H), 3.15 (m, 1 H), 1.89 (m, 2 H), 1.74 (m, 4 H), 1.58 (m, 2 H).

Example 209

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethoxy)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-trifluoromethoxyphenyl sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 500 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, 1 H), 8.71 (d, 1 H), 8.52 (d, 1 H), 8.00 (m, 2 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.71 (d, 1 H), 7.62 (d, 2 H), 6.95 (d, 1 H), 3.88 (m, 1 H), 3.18 (m, 1 H), 1.67-1.94 (m, 6 H), 1.59 (m, 2 H).

Example 210

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dimethylisoxazole-4-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3,5-dimethyl-isoxalazole-4-sulfonyl chloride sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 435 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.71 (m, 2 H), 8.51 (d, 1 H), 7.90 (d, 1 H), 7.83 (d, 1 H), 7.77 (dd, 1 H), 6.91 (d, 1 H), 3.84 (m, 1 H), 2.60 (s, 3 H), 2.36 (s, 3 H), 1.69-1.92 (m, 6 H), 1.63 (m, 2 H).

Example 211

cis-(E)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-phenylethylsulfonamide

The titled compound was prepared according to the method described in Example 15

by substituting trans-beta-styrenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 442 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (m, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 7.91 (d, 1 H), 7.78 (dd, 1 H), 7.71 (m, 2 H), 7.46 (m, 3 H), 7.38 (d, 1 H), 7.21 (d, 1 H), 7.18 (d, 1 H), 6.95 (d, 1 H), 3.89 (m, 1 H), 3.42 (m, 1 H), 1.91 (m, 4 H), 1.72 (m, 4 H).

Example 212

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-vinylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting p-styrenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 442 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.91 (d, 1 H), 7.82 (m, 3 H), 7.70 (d, 2 H), 7.55 (d, 1 H), 6.93 (d, 1 H), 6.82 (m, 1 H), 6.01 (d, 1 H), 5.45 (d, 1 H), 3.86 (m, 1 H), 3.13 (m, 1 H), 1.89 (m, 2 H), 1.75 (m, 4 H), 1.57 (m, 2 H).

Example 213

cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-chlorothiophene-2-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 458 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (m, 1 H), 8.69 (d, 1 H), 8.52 (d, 1 H), 7.94 (d, 1 H), 7.91 (d, 1 H), 7.78 (dd, 1 H), 7.52 (d, 1 H), 7.27 (d, 1 H), 6.94 (d, 1 H), 3.89 (m, 1 H), 1.79-2.00 (m, 4 H), 1.74 (m, 2 H), 1.63 (m, 2 H).

Example 214

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,1,3-benzoxadiazole-4-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting benzo(1,2,5)oxadiazole-4-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 458 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.69 (m, 2 H), 8.50 (d, 1 H), 8.37 (d, 1 H), 8.16 (d, 1 H), 8.12 (d, 1 H), 7.91 (d, 1 H), 7.79 (m, 2 H), 6.89 (d, 1 H), 3.84 (m, 1 H), 3.54 (m, 1 H), 1.88 (m, 2 H), 1.75 (m, 4 H), 1.59 (m, 2 H).

Example 215

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-nitrobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-nitrobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 461 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (m, 1 H), 8.69 (d, 1 H), 8.63 (t, 1 H), 8.51 (m, 2 H), 8.28 (d, 1 H), 7.93 (m, 3 H), 7.79 (dd, 1 H), 6.93 (d, 1 H), 3.88 (m, 1 H), 3.20 (m, 1 H), 1.67-1.93 (m, 6 H), 1.60 (m, 2 H).

Example 216

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-nitrobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-nitrobenzene sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 461 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, 1 H), 8.69 (d, 1 H), 8.51 (d, 1 H), 8.44 (d, 2 H), 8.12 (d, 2 H), 7.95 (d, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 6.93 (d, 1 H), 3.86 (m, 1 H), 3.23 (m, 1 H), 1.67-1.93 (m, 6 H), 1.60 (m, 2 H).

Example 217

cis-3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3-chloro-4-methyl-benzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 465 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.86 (d, 1 H), 7.79 (dd, 1 H), 7.72 (dd, 1 H), 7.61 (m, 2 H), 6.93 (d, 1 H), 3.86 (m, 1 H), 3.14 (m, 1 H), 2.42 (s, 3 H), 1.64-1.94 (m, 6 H), 1.58 (m, 2 H).

Example 218

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}quinoline-8-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 8-quinolinesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 467 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 9.12 (dd, 1 H), 8.80 (d, 1 H), 8.66 (d, 1 H), 8.60 (dd, 1 H), 8.50 (d, 1 H), 8.36 (m, 2 H), 7.91 (d, 1 H), 7.81 (m, 2 H), 7.75 (m, 1 H), 6.95 (d, 1 H), 6.91 (d, 1 H), 3.85 (m, 1 H), 1.91 (m, 2 H), 1.63 (m, 4 H), 1.49 (m, 2 H).

Example 219*cis*-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-dimethyl-1H-pyrazole-4-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-chloro-1,3-dimethyl-1H-pyrazole-4-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 469 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.77 (m, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 7.91 (d, 1 H), 7.79 (dd, 1 H), 7.57 (d, 1 H), 6.92 (d, 1 H), 3.85 (m, 1 H), 3.78 (s, 3 H), 3.22 (m, 1 H), 2.33 (s, 3 H), 1.89 (m, 4 H), 1.71 (m, 2 H), 1.58 (m, 2 H).

Example 220*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,1,3-benzothiadiazole-4-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting benzo(1,2,5)thiadiazole-4-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 474 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.71 (m, 2 H), 8.50 (d, 1 H), 8.41 (d, 1 H), 8.25 (d, 1 H), 7.90 (m, 2 H), 7.79 (dd, 1 H), 7.73 (d, 1 H), 6.89 (d, 1 H), 3.82 (m, 1 H), 3.50 (m, 1 H), 1.89 (m, 2 H), 1.60-1.81 (m, 4 H), 1.55 (m, 2 H).

Example 221*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methyl-5-nitrobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-methyl-5-nitrobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 475 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.74 (m, 2 H), 8.60 (d, 1 H), 8.51 (d, 1 H), 8.37 (dd, 1 H), 8.09 (d, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 7.74 (d, 1 H), 6.91 (d, 1 H), 4.07 (m, 1 H), 3.84 (m, 1 H), 2.75 (s, 3 H), 1.66-1.95 (m, 6 H), 1.60 (m, 2 H).

Example 222*cis*-methyl 3-(((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonyl)thiophene-2-carboxylate

The titled compound was prepared according to the method described in Example 15 by substituting 3-chlorosulfonyl-thiophene-2-carboxylic acid methyl ester for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 480 (M+H)⁺; ¹H NMR (500 MHz,

DMSO) δ ppm 8.77 (m, 1 H), 8.66 (d, 1 H), 8.52 (d, 1 H), 8.04 (d, 1 H), 7.91 (d, 1 H), 7.80 (dd, 1 H), 7.52 (d, 1 H), 7.01 (d, 1 H), 6.94 (d, 1 H), 3.90 (m, 4 H), 3.40 (m, 1 H), 1.69-1.92 (m, 6 H), 1.62 (m, 2 H).

Example 223

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(1,1-dimethylpropyl)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-n-amybenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 486 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.80 (m, 1 H), 8.50 (d, 1 H), 8.50 (d, 1 H), 7.91 (d, 1 H), 7.79 (m, 3 H), 7.56 (d, 2 H), 7.48 (d, 1 H), 6.92 (d, 1 H), 3.83 (m, 1 H), 3.11 (m, 1 H), 1.89 (m, 2 H), 1.49-1.83 (m, 8 H), 1.28 (s, 6 H), 0.61 (t, 3 H).

Example 224

cis-4-butoxy-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-butoxybenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 488 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.91 (d, 1 H), 7.77 (m, 3 H), 7.37 (d, 1 H), 7.11 (d, 2 H), 6.92 (d, 1 H), 4.06 (t, 2 H), 3.85 (m, 1 H), 3.08 (m, 1 H), 1.65-1.97 (m, 8 H), 1.55 (m, 2 H), 1.44 (m, 2 H), 0.94 (t, 3 H).

Example 225

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-isoxazol-3-ylthiophene-2-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-isoxazol-3-yl-thiophene-2-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 490 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (d, 1 H), 8.73 (d, 1 H), 8.69 (d, 1 H), 8.52 (d, 1 H), 8.04 (d, 1 H), 7.91 (d, 1 H), 7.78 (m, 2 H), 7.72 (d, 1 H), 7.10 (d, 1 H), 6.94 (d, 1 H), 3.88 (m, 1 H), 3.37 (m, 1 H), 1.89 (m, 4 H), 1.77 (m, 2 H), 1.65 (m, 2 H).

Example 226*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-((1*S*,4*R*)-7,7-dimethyl-2-oxobicyclo(2.2.1)hept-1-yl)methanesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting (+)-10-camphorsulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 491 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, 1 H), 8.70 (d, 1 H), 8.53 (d, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 6.97 (m, 2 H), 3.92 (m, 1 H), 3.60 (m, 1 H), 3.39 (m, 1 H), 2.97 (d, 1 H), 2.38 (m, 2 H), 2.07 (m, 1 H), 1.91 (m, 6 H), 1.74 (m, 4 H), 1.54 (m, 1 H), 1.40 (m, 1 H), 1.05 (s, 3 H), 0.83 (s, 3 H).

Example 227*cis*-2,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-3-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,5-dichlorothiophene-3-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 491 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.77 (m, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 7.98 (d, 1 H), 7.91 (d, 1 H), 7.79 (dd, 1 H), 7.34 (s, 1 H), 6.94 (d, 1 H), 3.87 (m, 1 H), 3.40 (m, 1 H), 1.87 (m, 4 H), 1.76 (m, 2 H), 1.65 (m, 2 H).

Example 228*cis*-4,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,3-dichlorothiophene-5-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 491 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.77 (d, 1 H), 8.69 (d, 1 H), 8.52 (d, 1 H), 8.09 (d, 1 H), 7.91 (d, 1 H), 7.79 (dd, 1 H), 7.73 (s, 1 H), 6.95 (d, 1 H), 3.89 (m, 1 H), 3.40 (m, 1 H), 1.85 (m, 4 H), 1.77 (m, 2 H), 1.66 (m, 2 H).

Example 229*cis*-7-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,1,3-benzoxadiazole-4-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 7-chloro-benzo(1,2,5)oxadiazole-4-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) *m/e* 493 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.71

(m, 2 H), 8.51 (d, 1 H), 8.22 (d, 1 H), 8.06 (d, 1 H), 7.93 (m, 2 H), 7.79 (dd, 1 H), 6.90 (d, 1 H), 3.85 (m, 1 H), 3.50 (m, 1 H), 1.65-1.97 (m, 6 H), 1.58 (m, 2 H).

Example 230

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(methylsulfonyl)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-methylsulfonylbenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 494 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.77 (m, 1 H), 8.69 (d, 1 H), 8.51 (d, 1 H), 8.17 (d, 2 H), 8.11 (d, 2 H), 7.91 (d, 1 H), 7.87 (d, 1 H), 7.79 (dd, 1 H), 6.93 (d, 1 H), 3.86 (m, 1 H), 3.21 (m, 1 H), 1.68-1.95 (m, 6 H), 1.60 (m, 2 H).

Example 231

cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-nitrobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-chloro-3-nitrobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 495 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (d, 1 H), 8.69 (d, 1 H), 8.52 (m, 2 H), 8.13 (dd, 1 H), 8.05 (d, 1 H), 7.92 (m, 2 H), 7.80 (dd, 1 H), 6.94 (d, 1 H), 3.89 (m, 1 H), 3.27 (m, 1 H), 1.69-1.95 (m, 6 H), 1.61 (m, 2 H).

Example 232

cis-6-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3H-1λ⁴-imidazo(2,1-b)(1,3)thiazole-5-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 6-chloro-3H-1λ⁴-imidazo(2,1-b)thiazole-5-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 498 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.76 (m, 1 H), 8.69 (d, 1 H), 8.52 (d, 1 H), 8.23 (d, 1 H), 8.05 (d, 1 H), 7.91 (d, 1 H), 7.79 (dd, 1 H), 7.64 (d, 1 H), 6.92 (d, 1 H), 3.86 (m, 1 H), 2.54 (m, 1 H), 1.70-1.93 (m, 6 H), 1.64 (m, 2 H).

Example 233*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(trifluoroacetyl)-1,2,3,4-tetrahydroisoquinoline-7-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-(2,2,2-trifluoro-acetyl)-1,2,3,4-tetrahydro-isoquinoline-7-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 567 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.76 (m, 3 H), 7.51 (m, 1 H), 7.45 (m, 1 H), 6.94 (d, 1 H), 4.86 (d, 2 H), 3.85 (m, 3 H), 3.14 (m, 1 H), 2.98 (m, 2 H), 1.75-2.02 (m, 4 H), 1.70 (m, 2 H), 1.56 (m, 2 H).

Example 234*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2-methylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-fluoro-2-methylbenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 448 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (d, 1 H), 8.71 (d, 1 H), 8.52 (d, 1 H), 7.92 (d, 1 H), 7.80 (m, 2 H), 7.62 (dd, 1 H), 7.44 (m, 2 H), 6.92 (d, 1 H), 3.85 (m, 1 H), 3.85 (m, 1 H), 2.59 (s, 3 H), 1.87 (m, 2 H), 1.73 (m, 4 H), 1.60 (m, 2 H).

Example 235*cis*-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethyl)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-chloro-3-(trifluoromethyl)benzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 518 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.69 (d, 1 H), 8.52 (d, 1 H), 8.25 (d, 1 H), 8.15 (dd, 1 H), 8.01 (d, 1 H), 7.91 (d, 1 H), 7.87 (d, 1 H), 7.80 (dd, 1 H), 6.95 (d, 1 H), 3.87 (m, 1 H), 3.21 (m, 1 H), 1.89 (m, 2 H), 1.75 (m, 4 H), 1.61 (m, 2 H).

Example 236*cis*-2,4,5-trichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,4,5-trichlorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl

chloride. MS (ESI (+)) m/e 520 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.70 (m, 2 H), 8.52 (d, 1 H), 8.11 (m, 3 H), 7.91 (d, 1 H), 7.79 (dd, 1 H), 6.91 (d, 1 H), 3.86 (m, 1 H), 3.38 (m, 1 H), 1.91 (m, 2 H), 1.76 (m, 4 H), 1.61 (m, 2 H).

Example 237

cis-2,4,6-trichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,4,6-trichlorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 520 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.68 (m, 2 H), 8.51 (d, 1 H), 8.12 (d, 1 H), 7.91 (d, 1 H), 7.89 (s, 1 H), 7.79 (dd, 1 H), 6.89 (d, 1 H), 3.84 (m, 1 H), 3.39 (m, 1 H), 1.88 (m, 2 H), 1.76 (m, 4 H), 1.62 (m, 2 H).

Example 238

cis-2,3,4-trichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,3,4-trichlorobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 520 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.72 (m, 2 H), 8.52 (d, 1 H), 8.11 (d, 1 H), 7.99 (d, 1 H), 7.92 (d, 1 H), 7.89 (d, 1 H), 7.80 (dd, 1 H), 6.91 (d, 1 H), 3.85 (m, 1 H), 3.36 (m, 1 H), 1.90 (m, 2 H), 1.75 (m, 4 H), 1.61 (m, 2 H).

Example 239

cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methyl-1-benzothiophene-2-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-chloro-3-methyl-benzo(b)thiophene-2-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 521 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.71 (d, 1 H), 8.51 (d, 1 H), 8.15 (d, 1 H), 8.10 (d, 1 H), 8.05 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 7.59 (dd, 1 H), 6.93 (d, 1 H), 3.85 (m, 1 H), 3.38 (m, 1 H), 2.66 (s, 3 H), 1.68-1.96 (m, 6 H), 1.62 (m, 2 H).

Example 240*cis*-5-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxybenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-bromo-2-methoxybenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 525 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.73 (m, 2 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.80 (m, 3 H), 7.30 (d, 1 H), 7.24 (d, 1 H), 6.92 (d, 1 H), 3.93 (s, 3 H), 3.83 (m, 1 H), 3.23 (m, 1 H), 1.90 (m, 2 H), 1.74 (m, 4 H), 1.58 (m, 2 H).

Example 241*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-nitro-4-(trifluoromethyl)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-nitro-4-(trifluoromethyl)benzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 529 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, 1 H), 8.70 (d, 1 H), 8.57 (d, 1 H), 8.53 (d, 1 H), 8.32 (m, 3 H), 7.92 (d, 1 H), 7.81 (dd, 1 H), 6.95 (d, 1 H), 3.90 (m, 1 H), 3.39 (m, 1 H), 1.72-1.96 (m, 6 H), 1.66 (m, 2 H).

Example 242*cis*-N-({5-(((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonyl)thien-2-yl)methyl)benzamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-(benzoylamino-methyl)-thiophene-2-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 557 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 9.26 (t, 1 H), 8.84 (d, 1 H), 8.69 (d, 1 H), 8.51 (d, 1 H), 7.91 (d, 1 H), 7.88 (m, 2 H), 7.79 (dd, 1 H), 7.69 (d, 1 H), 7.55 (m, 1 H), 7.47 (m, 3 H), 7.09 (d, 1 H), 6.93 (d, 1 H), 4.66 (d, 2 H), 3.86 (m, 1 H), 3.25 (m, 1 H), 1.85 (m, 4 H), 1.71 (m, 2 H), 1.61 (m, 2 H).

Example 243*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-(2-(methylthio)pyrimidin-4-yl)thiophene-2-sulfonamide

The titled compound was prepared according to the method described in Example 15

by substituting 5-(2-methylsulfanyl-pyrimidin-4-yl)-thiophene-2-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 546 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, 1 H), 8.71 (m, 2 H), 8.52 (d, 1 H), 8.11 (d, 1 H), 7.97 (d, 1 H), 7.92 (d, 1 H), 7.80 (m, 2 H), 7.72 (d, 1 H), 6.95 (d, 1 H), 3.88 (m, 1 H), 3.88 (m, 1 H), 2.57 (s, 3 H), 1.89 (m, 4 H), 1.76 (m, 2 H), 1.65 (m, 2 H).

Example 244

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-bis(trifluoromethyl)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 3,5-bis(trifluoromethyl)benzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 552 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (m, 1 H), 8.68 (d, 1 H), 8.52 (m, 2 H), 8.47 (s, 2 H), 7.98 (d, 1 H), 7.91 (d, 1 H), 7.80 (dd, 1 H), 6.94 (d, 1 H), 3.88 (m, 1 H), 1.87 (m, 2 H), 1.75 (m, 4 H), 1.60 (m, 2 H).

Example 245

cis-2,6-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethyl)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2,6-dichloro-4-trifluoromethyl-phenyl-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 553 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.73 (m, 2 H), 8.52 (d, 1 H), 8.31 (d, 1 H), 8.11 (s, 2 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 6.91 (d, 1 H), 3.86 (m, 1 H), 3.43 (m, 1 H), 1.90 (m, 2 H), 1.76 (m, 4 H), 1.62 (m, 2 H).

Example 246

cis-2-butoxy-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-(1,1-dimethylpropyl)benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-butoxy-5-tert-pentylbenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 558 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.67 (d, 2 H), 8.51 (d, 1 H), 7.90 (d, 1 H), 7.78 (dd, 1 H), 7.68 (d, 1 H), 7.54 (dd, 1 H), 7.17 (d, 1 H), 6.90 (d, 1 H), 6.66 (d, 1 H), 4.13 (t, 2 H), 3.84 (m, 1 H), 1.90 (m, 2 H), 1.75 (m, 6 H), 1.60 (m, 4 H), 1.48 (m, 2 H), 1.24 (s, 6 H), 0.94 (t, 3 H), 0.62 (t, 3 H).

Example 247*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-(phenylsulfonyl)thiophene-2-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 5-benzenesulfonyl-thiophene-2-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (-)) m/e 560(M-1); ¹H NMR (500 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.69 (d, 1 H), 8.52 (d, 1 H), 8.18 (d, 1 H), 8.05 (m, 2 H), 7.91 (d, 2 H), 7.79 (m, 2 H), 7.67 (m, 3 H), 6.95 (d, 1 H), 3.88 (m, 1 H), 3.23 (m, 1 H), 1.55-1.91 (m, 8 H).

Example 248*cis*-4-(3-chloro-2-cyanophenoxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} benzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-(3-chloro-2-cyano-phenoxy)-benzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 568 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.77 (m, 1 H), 8.69 (d, 1 H), 8.51 (d, 1 H), 7.92 (m, 3 H), 7.77 (m, 2 H), 7.59 (m, 2 H), 7.39 (d, 2 H), 7.17 (d, 1 H), 6.92 (d, 1 H), 3.85 (m, 1 H), 3.17 (m, 1 H), 1.68-1.95 (m, 6 H), 1.59 (m, 2 H).

Example 249*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-ethylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-ethylbenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 444 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, 1 H), 8.71 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.78 (m, 3 H), 7.45 (m, 3 H), 6.94 (d, 1 H), 3.86 (m, 1 H), 3.10 (m, 1 H), 2.70 (q, 2 H), 1.90 (m, 2 H), 1.76 (m, 4 H), 1.57 (m, 2 H), 1.21 (t, 3 H).

Example 250cis-4-bromo-2,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-3-sulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 4-bromo-2,5-dichlorothiophene-3-sulfonyl chloride for 4-chlorobenzene sulfonyl chloride. ¹H NMR (500 MHz, DMSO) δ ppm 8.73 (m, 2 H), 8.53 (d, 1 H), 8.17 (d, 1 H), 7.92 (d, 1 H), 7.80 (dd, 1 H), 6.92 (d, 1 H), 3.87 (m, 1 H), 3.42 (m, 1 H), 1.56-2.04 (m, 8 H).

Example 251cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxy-5-methylbenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 6-methoxy-m-touenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 460 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.70 (d, 1 H), 8.51 (d, 1 H), 7.92 (d, 1 H), 7.81 (dd, 1 H), 7.57 (d, 1 H), 7.42 (dd, 1 H), 7.14 (d, 1 H), 6.92 (m, 2 H), 3.87 (m, 4 H), 3.15 (m, 1 H), 2.30 (s, 3 H), 1.92 (m, 2 H), 1.73 (m, 4 H), 1.42-1.66 (m, 2 H).

Example 252cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-nitrobenzenesulfonamide

The titled compound was prepared according to the method described in Example 15 by substituting 2-nitrobenzenesulfonyl chloride for 4-chlorobenzene sulfonyl chloride. MS (ESI (+)) m/e 461 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.76 (d, 1 H), 8.70 (d, 1 H), 8.52 (d, 1 H), 8.07 (m, 1 H), 8.02 (d, 1 H), 7.96 (m, 1 H), 7.92 (d, 1 H), 7.88 (m, 2 H), 7.80 (dd, 1 H), 6.93 (d, 1 H), 3.87 (m, 1 H), 1.67-2.00 (m, 6 H), 1.63 (m, 2 H).

Example 253cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}isonicotinamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-chloro isonicotinic acid for indole-6-carboxylic acid. MS (ESI(+)) Q1MS m/z 415 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D6) δ ppm 8.56 (d, 2 H), 8.41 (s, 1 H), 8.39

(d, 1 H), 7.90 (s, 1 H), 7.78 (m, 2 H), 7.45 (dd, 1 H), 6.82 (d, 1 H), 6.54 (d, 1 H), 3.98 (br.s, 1 H), 3.67 (br.s, 1 H), 1.61-2.04 (m, 8 H).

Example 254

cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-6-methylisonicotinamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-chloro-6-methylisonicotinic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 429 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 8.62 (d, 1 H), 8.42 (s, 1 H), 8.39 (d, 1 H), 7.92 (s, 2 H), 7.79 (d, 1 H), 7.46 (dd, 1 H), 6.84 (d, 1 H), 6.55 (d, 1 H), 3.96 (br.s, 1 H), 3.69 (br.s, 1 H), 2.51 (s, 3 H), 1.62-1.99 (m, 8 H).

Example 255

cis-2,6-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}isonicotinamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,6-dichloroisonicotinic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 449 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 8.48 (d, 1 H), 8.40 (s, 1 H), 8.38 (d, 1 H), 7.78 (d, 1 H), 7.68 (s, 1 H), 7.65 (s, 1 H), 7.44 (dd, 1 H), 6.81 (d, 1 H), 6.53 (d, 1 H), 3.96 (br.s, 1 H), 3.68 (m, 1 H), 1.62-2.02 (m, 8 H).

Example 256

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-phenylpentanamide

31 mg (0.16 mmol) of 5-phenylvaleric acid, 112 mg (0.22 mmol) of PS-carbodiimide and 28 mg (0.18 mmol) HOBT in DMF (1mL) were mixed for 15 min. 30 mg (0.11mmol) of N-(7-chloroquinolin-4-yl)-cyclohexane-1,4-diamine was added and the reaction was allowed to proceed overnight. 116 mg (0.54 mmol) of PS-trisamine was added and the reaction mixture was filtered after two hours. The solvent was evaporated and the product was purified by reverse phase HPLC to provide the titled compound. MS (ESI(+)) m/e 436 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 13.86 (brs, 1H), 8.82 (d, 1 H), 8.72 (d, 1 H), 8.54 (d, 1 H), 7.94 (d, 1 H), 7.78 (dd, 1 H), 7.69 (d, 1 H), 7.21 (m, 5 H), 6.96 (d, 1 H), 3.89 (m, 1 H), 3.80 (m, 1 H), 2.58 (m, 2 H), 2.50 (m, 2 H), 2.16 (m, 2 H), 1.82 (m, 6 H), 1.47-1.70 (m, 6 H).

Example 257*cis*-(*N*¹-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}glycinamide)benzamide

The titled compound was prepared according to the methods described in Example 256, substituting hippuric acid for 5-phenylvaleric acid. MS (ESI(+)) *m/e* 437 (*M*+*H*)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 13.74-14.03 (br.s, 1 H), 8.88 (d, 1 H), 8.74 (d, 1 H), 8.65 (t, 1 H), 8.55 (d, 1 H), 7.95 (d, 1 H), 7.87 (m, 3 H), 7.79 (dd, 1 H), 7.55 (m, 1 H), 7.48 (m, 2 H), 6.98 (d, 1 H), 3.94 (d, 2 H), 3.91 (m, 1 H), 3.85 (m, 1 H), 1.63-1.93 (m, 8 H).

Example 258*cis*-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-phenoxybutanamide

The titled compound was prepared according to the methods described in Example 256, substituting 4-phenoxybutyric acid for 5-phenylvaleric acid. MS (ESI(+)) *m/e* 438 (*M*+*H*)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 13.73-13.96 (br.s, 1 H), 8.86 (d, 1 H), 8.72 (d, 1 H), 8.54 (d, 1 H), 7.94 (d, 1 H), 7.78 (m, 2 H), 7.27 (dd, 2 H), 6.97 (d, 1 H), 6.91 (m, 3 H), 3.97 (t, 2 H), 3.90 (m, 1 H), 3.82 (m, 1 H), 2.31 (m, 2 H), 1.95 (m, 2 H), 1.81 (m, 6 H), 1.66 (m, 2 H).

Example 259*cis*-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(3-methyl-1H-indol-1-yl)propanamide

The titled compound was prepared according to the methods described in Example 256, substituting 3-(3-methylindol-1-yl)propionic acid for 5-phenylvaleric acid. MS (ESI(+)) *m/e* 461 (*M*+*H*)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 13.52-14.11 (br.s, 1 H), 8.82 (d, 1 H), 8.69 (d, 1 H), 8.53 (d, 1 H), 7.93 (d, 1 H), 7.80 (d, 1 H), 7.77 (dd, 1 H), 7.45 (d, 1 H), 7.42 (d, 1 H), 7.11 (m, 1 H), 7.06 (m, 1 H), 6.99 (m, 1 H), 6.94 (d, 1 H), 4.35 (t, 2 H), 3.87 (m, 1 H), 3.80 (m, 1 H), 2.60 (t, 2 H), 2.21 (s, 3 H), 1.57-1.81 (m, 8 H).

Example 260*cis*-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(1-methyl-1H-benzimidazol-2-yl)propanamide

The titled compound was prepared according to the methods described in Example 256, substituting 3-(1-methyl-1H-benzo(D)imidazol-2-yl)propanoic acid for 5-phenylvaleric

acid. MS (ESI(+)) m/e 462 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 13.56-14.31 (br.s, 1 H), 8.87 (d, 1 H), 8.73 (d, 1 H), 8.54 (d, 1 H), 8.05 (d, 1 H), 7.96 (d, 1 H), 7.85 (d, 1 H), 7.79 (dd, 1 H), 7.75 (d, 1 H), 7.49 (m, 2 H), 6.95 (d, 1 H), 3.96 (s, 3 H), 3.90 (m, 1 H), 3.81 (m, 1 H), 3.32 (t, 2 H), 2.83 (t, 2 H), 1.57-1.94 (m, 8 H).

Example 261

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(6-methoxy-3-oxo-2,3-dihydro-1H-inden-1-yl)acetamide

The titled compound was prepared according to the methods described in Example 256, substituting 5-methoxy-1-indanone-3-acetic acid for 5-phenylvaleric acid. MS (ESI(+)) m/e 478 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 13.60-13.80 (br.s, 1 H), 8.76 (br.s, 1 H), 8.69 (d, 1 H), 8.54 (d, 1 H), 7.91 (d, 1 H), 7.84 (d, 1 H), 7.78 (dd, 1 H), 7.56 (d, 1 H), 7.15 (d, 1 H), 6.98 (dd, 1 H), 6.95 (d, 1 H), 3.87 (m, 2 H), 3.85 (s, 3 H), 3.71 (m, 1 H), 2.80 (dd, 1 H), 2.72 (dd, 1 H), 2.36 (m, 2 H), 1.61-1.90 (m, 8 H).

Example 262

cis-1-benzoyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}piperidine-4-carboxamide

The titled compound was prepared according to the methods described in Example 256, substituting 1-benzoylpiperidine-4-carboxylic acid for 5-phenylvaleric acid. MS (ESI(+)) m/e 491 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 13.87 (br.s, 1 H), 8.86 (d, 1 H), 8.72 (d, 1 H), 8.54 (d, 1 H), 7.95 (d, 1 H), 7.79 (dd, 1 H), 7.72 (d, 1 H), 7.45 (m, 3 H), 7.37 (m, 2 H), 6.97 (d, 1 H), 4.37-4.62 (br.s, 1 H), 3.91 (m, 1 H), 3.80 (m, 1 H), 2.72-3.12 (m, 2 H), 2.54 (m, 2 H), 1.41-1.96 (m, 12 H).

Example 263

cis-(N¹-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-β-alaninamide) 4-nitrobenzamide

The titled compound was prepared according to the methods described in Example 256, substituting N-(4-nitrobenzoyl)-β-alanine for 5-phenylvaleric acid. MS (ESI(+)) m/e 496 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 13.66-14.02 (br.s, 1 H), 8.86 (t, 1 H), 8.83 (d, 1 H), 8.70 (d, 1 H), 8.54 (d, 1 H), 8.28 (d, 2 H), 8.05 (d, 2 H), 7.94 (d, 1 H), 7.83 (d, 1 H), 7.78 (dd, 1 H), 6.95 (d, 1 H), 3.88 (m, 2 H), 3.52 (m, 2 H), 2.47 (t, 2 H), 1.59-1.91 (m, 8 H).

Example 264*cis*- (N¹-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-β-alaninamide)benzamide

The titled compound was prepared according to the methods described in Example 256, substituting N-benzoyl-beta-alanine for 5-phenylvaleric acid. MS (ESI(+)) m/e 451 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.71 (d, 1 H), 8.54 (d, 1 H), 8.49 (m, 1 H), 8.49 (br.s, 1 H), 7.93 (d, 1 H), 7.83 (m, 2 H), 7.79 (dd, 1 H), 7.46 (m, 4 H), 6.96 (d, 1 H), 3.90 (m, 1 H), 3.82 (m, 1 H), 3.49 (m, 2 H), 2.45 (t, 2 H), 1.58-1.92 (m, 8 H).

Example 265*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(4-propoxyphenyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 4-propoxyphenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (-)) m/e 451 (M-1); ¹H NMR (500 MHz, DMSO) δ ppm 8.77 (br.s, 1 H), 8.70 (d, 1 H), 8.54 (d, 1 H), 8.19 (s, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 7.26 (d, 2 H), 6.97 (d, 1 H), 6.81 (d, 2 H), 6.17 (d, 1 H), 3.91 (m, 1 H), 3.85 (t, 2 H), 3.78 (m, 1 H), 1.62-1.89 (m, 10 H), 0.96 (t, 3 H).

Example 266*cis*-N-(5-tert-butyl-2-methoxyphenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea

The titled compound was prepared according to the method described in Example 2 by substituting 4-propoxyphenyl isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 481 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (m, 1 H), 8.72 (d, 1 H), 8.55 (d, 1 H), 8.26 (s, 1 H), 7.93 (m, 2 H), 7.80 (m, 1 H), 6.99 (d, 2 H), 6.86 (s, 2 H), 3.90 (m, 1 H), 3.82 (s, 3 H), 3.79 (m, 1 H), 1.67-1.92 (m, 8 H), 1.23 (s, 9 H).

Example 268*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(2-furylmethyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 2-furan isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 399 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.71 (d, 1 H), 8.54 (d, 1 H), 7.92 (s, 1 H), 7.79 (dd, 1 H), 7.56 (s, 1 H), 6.97 (d, 1 H), 6.39 (m, 1 H), 6.20 (m, 2 H), 6.02 (d, 1 H), 4.21 (d, 2 H), 3.89 (m, 1 H), 3.70 (m, 1 H), 1.56-1.93 (m, 8 H).

Example 269*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-furylmethyl)urea

The titled compound was prepared according to the method described in Example 2 by substituting 2-furan isocyanate for 4-chlorophenyl isocyanate. MS (ESI (+)) m/e 399 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.70 (d, 1 H), 8.54 (d, 1 H), 7.92 (d, 1 H), 7.79 (dd, 1 H), 7.58 (m, 1 H), 7.51 (m, 1 H), 6.97 (d, 1 H), 6.41 (m, 1 H), 6.01 (m, 1 H), 4.04 (d, 2 H), 3.88 (m, 1 H), 3.73 (m, 1 H), 1.57-1.88 (m, 8 H).

Example 271*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyclohexylacetamide

The titled compound was prepared according to the method described in Example 23 by substituting cyclohexylacetic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 400 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.74 (d, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.65 (d, 1 H), 6.96 (d, 1 H), 3.92-3.78 (m, 2 H), 2.0 (d, 2 H), 1.88-1.75 (m, 6 H), 1.70-1.58 (m, 7 H), 1.25-1.08 (m, 4 H), 0.98-0.88 (m, 2 H).

Example 272*cis*-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cycloheptylacetamide

The titled compound was prepared according to the method described in Example 23 by substituting cycloheptylacetic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 414 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.74 (d, 1 H), 8.55 (d, 1 H), 7.95 (d, 1 H), 7.80 (dd, 1 H), 7.52 (d, 1 H), 6.97 (d, 1 H), 3.95-3.85 (m, 1 H), 3.78-3.71 (m, 1 H), 2.40-2.34 (m, 2 H), 1.87-1.36 (m, 21 H).

Example 273*cis*-2-((1R,4S)-bicyclo(2.2.1)hept-2-yl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide

The titled compound was prepared according to the method described in Example 23 by substituting 2-norbornaneacetic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 412 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.74 (d, 1 H), 8.55 (d, 1 H), 7.95 (d, 1 H), 7.80 (dd, 1 H), 7.63 (m, 1 H), 6.97 (d, 1 H), 3.92-3.83 (m, 1 H), 3.82-3.76 (m, 1 H), 2.20-2.15 (m, 2 H), 2.10-1.03 (m, 19 H).

Example 274

cis-2-(1-adamantyl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide

The titled compound was prepared according to the method described in Example 23 by substituting 1-adamantylacetic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 452 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.81 (d, 1 H), 8.74 (d, 1 H), 8.55 (d, 1 H), 7.93 (d, 1 H), 7.79 (dd, 1 H), 7.58 (d, 1 H), 6.96 (d, 1 H), 3.91-3.83 (m, 1 H), 3.82-3.78 (m, 1 H), 1.92 (s, 2 H), 1.90-1.55 (m, 24 H).

Example 275

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-fluorophenyl)acetamide

The titled compound was prepared according to the method described in Example 23 by substituting 3-fluorophenylacetic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 412 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.63 (d, 1 H), 8.50 (d, 1 H), 8.28 (br s, 1 H), 8.02 (d, 1 H), 7.89 (d, 1 H), 7.70 (d, 1 H), 7.38-7.30 (m, 1 H), 7.10-7.03 (m, 3 H), 6.83 (d, 1 H), 3.85-3.78 (m, 2 H), 3.50 (s, 2 H), 1.86-1.62 (m, 8 H).

Example 276

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-(trifluoromethyl)phenyl)acetamide

The titled compound was prepared according to the method described in Example 23 by substituting 3-(trifluoromethyl)phenylacetic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 462 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.74 (d, 1 H), 8.55 (d, 1 H), 8.10 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.62 (s, 1 H), 7.60-7.53 (m, 3 H), 6.98 (d, 1 H), 3.95-3.86 (m, 1 H), 3.83-3.79 (m, 1 H), 3.60 (s, 2 H), 1.90-1.63 (m, 8 H).

Example 277

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-(trifluoromethyl)phenyl)acetamide

The titled compound was prepared according to the method described in Example 23 by substituting 4-(trifluoromethyl)phenylacetic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 462 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.74 (d, 1 H), 8.55 (d, 1 H), 8.10 (d, 1 H), 7.93 (d, 1 H), 7.80 (dd, 1 H), 7.66 (d, 2 H), 7.50 (d, 2 H), 6.98 (d, 1 H), 3.95-3.86 (m, 1 H), 3.83-3.79 (m, 1 H), 3.60 (s, 2 H), 1.90-1.63 (m, 8 H).

Example 278*cis*-3,5-difluoro-N-(4-{(6-fluoro-2-(trifluoromethyl)quinolin-4-yl)amino}cyclohexyl)benzamide

A solution of N-(4-Amino-cyclohexyl)-3,5-difluorobenzamide (30 mg, 0.12 mmol) in NMP (1.0 mL) was treated with 4-chloro-6-fluoro-2-trifluoromethyl-quinoline (1eq) and 3 eq (0.045 mL) TEA. The reaction was heated to 220 C in the microwave for 15 minutes. The crude compound was purified by reverse phase HPLC to provide the desired compound. MS (ESI (+)) m/e 468 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.32 (m, 2 H), 7.98 (m, 1 H), 7.67 (m, 1 H), 7.58 (m, 2 H), 7.44 (m, 1 H), 7.15 (d, 1 H), 6.82 (s, 1 H), 1.95 (m, 4 H), 1.65-1.88 (m, 4 H).

Example 279*cis*-3,5-difluoro-N-(4-{(8-(trifluoromethoxy)-2-(trifluoromethyl)quinolin-4-yl)amino}cyclohexyl)benzamide

The titled compound was prepared according to the method described in Example 278 by substituting 4-chloro-8-trifluoromethoxy-2-trifluoromethyl quinoline for 4-chloro-6-fluoro-2-trifluoromethyl-quinoline. MS (ESI (+)) m/e 534 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.51 (d, 1 H), 8.30 (d, 1 H), 7.80 (d, 1 H), 7.61 (m, 3 H), 7.43 (m, 2 H), 6.91 (s, 1 H), 1.94 (m, 4 H), 1.75 (m, 4 H).

Example 280*cis*-N-(4-{(5,7-dichloro-2-(trifluoromethyl)quinolin-4-yl)amino}cyclohexyl)-3,5-difluorobenzamide

The titled compound was prepared according to the method described in Example 278 by substituting 4,5,7-trichloro-2-trifluoromethyl quinoline for 4-chloro-6-fluoro-2-trifluoromethyl-quinoline. MS (ESI (+)) m/e 520 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.41 (d, 1 H), 7.96 (m, 1 H), 7.81 (m, 1 H), 7.69 (d, 1 H), 7.55 (d, 2 H), 7.44 (t, 1 H), 6.91 (s, 1 H), 4.04 (m, 1 H), 3.93 (m, 1 H), 1.96 (m, 2 H), 1.80 (m, 4 H), 1.68 (m, 2 H).

Example 281*cis*-3,5-difluoro-N-(4-{(6-methyl-2-(trifluoromethyl)quinolin-4-yl)amino}cyclohexyl)benzamide

The titled compound was prepared according to the method described in Example 278 by substituting 4-chloro-6-methyl-2-trifluoromethyl quinoline for 4-chloro-6-fluoro-2-trifluoromethyl-quinoline. MS (ESI (+)) m/e 464 (M+H)⁺; ¹H NMR (500 MHz, DMSO) δ ppm 8.31 (d, 1 H), 8.25 (s, 1 H), 7.80 (d, 1 H), 7.59 (m, 3 H), 7.43 (m, 1 H), 7.08 (m, 1 H), 6.76 (s, 1 H), 3.99 (m, 1 H), 3.83 (m, 1 H), 2.53 (s, 3 H), 1.86-2.13 (m, 3 H), 1.51-1.87 (m, 5 H).

Example 282*cis*-N-(7-chloroquinolin-4-yl)-N'-(3,5-dichlorophenyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 1-bromo-3,5-dichlorobenzene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 420 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D6) δ ppm 8.84 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.91 (d, 1 H), 7.80 (dd, 2.0 Hz, 1 H), 7.00 (d, 1 H), 6.63 (d, 2 H), 6.60 (t, 1 H), 6.25 (d, 1 H), 3.95 (br.s, 1 H), 3.57 (br.s, 1 H), 1.68-1.95 (m, 8 H).

Example 283*cis*-N-(7-chloroquinolin-4-yl)-N'-(3-methylphenyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 3-bromotoluene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 366 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D6) δ ppm 8.89 (d, 1 H), 8.71 (d, 1 H), 8.54 (d, 1 H), 8.25 (d, 1 H), 8.19 (d, 1 H), 7.91 (d, 1 H), 7.80 (dd, 1 H), 6.89-7.07 (m, 3 H), 6.38 (d, 1 H), 3.24-3.58 (m, 2 H), 2.19 (s, 3 H), 1.61-2.03 (m, 8 H).

Example 284*cis*-N-(3,5-bis(trifluoromethyl)phenyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 3,5-di(trifluoromethyl)benzoic acid for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 516 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D6) δ ppm 8.84 (d, 1 H), 8.72

(d, 1 H), 8.67 (d, 1 H), 8.51-8.61 (m, 3 H), 8.33 (s, 1 H), 7.92 (d, 1 H), 7.81 (dd, 1 H), 7.00 (d, 1 H), 4.03 (m, 2 H), 1.70-2.16 (m, 8 H).

Example 285

cis-N-1,1'-biphenyl-3-yl-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 3-bromobiphenyl for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 428 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 8.93 (d, 1 H), 8.72 (d, 1 H), 8.55 (d, 1 H), 7.91 (d, 1 H), 7.80 (dd, 1 H), 7.58 (d, 2 H), 7.44 (t, 2 H), 7.34 (t, 1 H), 7.18 (t, 1 H), 7.02 (d, 1 H), 6.89 (s, 1 H), 6.81 (d, 1 H), 6.66 (dd, 1 H), 5.50-5.81 (br.s., 1 H), 3.99 (br.s., 1 H), 3.65 (br.s., 1 H), 1.70-2.02 (m, 8 H).

Example 286

cis-N-(7-chloroquinolin-4-yl)-N'-(3-(trifluoromethyl)phenyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 3-trifluoromethylbromobenzene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 420 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 8.90 (d, 1 H), 8.71 (d, 1 H), 8.55 (d, 1 H), 7.91 (d, 1 H), 7.80 (dd, 1 H), 7.29 (t, 1 H), 7.01 (d, 1 H), 6.92 (s, 1 H), 6.88 (d, 1 H), 6.80 (d, 1 H), 6.09 (d, 1 H), 3.97 (br.s., 1 H), 3.62 (br.s., 1 H), 1.72-2.00 (m, 8 H).

Example 287

cis-4-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-2H-chromen-2-one

The titled compound was prepared according to the method described in Example 3 by substituting 4-chlorocoumarin for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 420 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.80 (d, 1 H), 8.72 (d, 1 H), 8.58 (d, 1 H), 8.22 (d, 1 H), 7.95 (d, 1 H), 7.82 (dd, 1 H), 7.62 (ddd, 1 H), 7.33-7.29 (m, 2 H), 7.14 (d, 1 H), 7.03 (d, 1 H), 5.30 (s, 1 H), 4.10-4.00 (m, 1 H), 3.85-3.75 (m, 1 H), 2.08-1.75 (m, 8 H).

Example 289*cis*-N,N'-bis(7-chloro-4-aminoquinolin-4-yl)cyclohexane-1,4-diamineExample 289A4,7-dichloroquinoline 1-oxide

A mixture of 4,7-dichloroquinoline (9.9 g, 50 mmol) and methyltrioxorhenium (80 mg, 0.32 mmol) was stirred in the mixture of hydrogenperoxide (40%, 20mL) and dichloromethane at room temperature for 24 hours. Pale yellow solid was collected by filtration and dried under vacuum. MS (ESI(+))Q1MS m/z 215 (M+H)⁺.

Example 289B*N*-(4,7-dichloroquinolin-2-yl)benzamide

A mixture of example 289A (10.0 g, 46.7 mmol) and benzoyl chloride (23.5 g, 168 mmol) and benzamide (5.9 g, 49.1 mmol) was heated at 180 °C for 6 hours, cooled to room temperature, filtered. Yellow solid as washed with large quantity of water and ethyl acetate (20 mL) and dried under vacuum. MS (ESI(+))Q1MS m/z 318 (M+H)⁺.

Example 289C4,7-dichloroquinolin-2-amine

A mixture of example 289B (5.0 g, 15.8 mmol) and hydrochloric acid (22%, 150 mL) was heated to reflux for 24 hours, cooled to room temperature, filtered. Filtrate was basified with 50% sodium hydroxide. Pale green solid was collected by filtration, washed with large quantity of water and dried under vacuum. MS (ESI(+))Q1MS m/z 291 (M+H)⁺.

Example 289D*cis*-N,N'-bis(7-chloro-4-aminoquinolin-4-yl)cyclohexane-1,4-diamine

A mixture of example 289C (500 mg, 2.35 mmol), 1,4-cyclohexanediamine (133 mg, 1.17 mmol), sodium t-butoxide (275 mg, 2.86 mmol), tris(dibenzylideneacetone)-dipalladium(0) (55 mg, 0.06 mmol) and (R)-(+)-2,2'-bis(diphenylphosphinol)-1,1'-binaphthyl was heated at 90°C in 1,2-dimethoxyethane (5mL) for 6 hours, cooled to room temperature, filtered. The 1,2-dimethoxyethane was removed via vacuum and the residue was purified by high throughput HPLC to provide the desired compound as its TRIFLUOROACETIC ACID salt. MS (ESI(+))Q1MS m/z 467 (M+H)⁺. ¹H NMR (300 MHz, DMSO) δ ppm 13.05 (s, 1 H), 9.66 (s, 1 H), 8.89 (s, 1H), 8.57 (d, 1 H), 8.37 (d, 1 H), 7.93 (d, 1 H), 7.85 (s, 2 H), 7.70

(d, 1 H), 7.65 (dd, 1 H), 7.44 (dd, 1 H), 6.81 (s, 1 H), 6.71 (s, 1 H), 3.69 (s, 2 H), 2.06 (m, 2 H), 1.80 (m, 6 H).

Example 291

4-({4-[(7-chloroquinolin-4-yl)amino]cyclohexyl}amino)-2H-chromen-2-one

To a conical microwave vessel (7.5 mL) equipped with a septum cap and a magnetic stirring bar was added a solution of a trifluoro-methanesulfonic acid 6-chloro-2-oxo-2H-chromen-4-yl ester (0.014 g; 0.043 mmol) in dry acetonitrile (1 mL) containing Et₃N (0.025 mL). Then, a solution of 4-amino-chromen-2-one (0.0178 g; 1.5 eq.) in 1:1:1 mixture of acetonitrile/dichloromethane/DMF (1 mL) was added to the vessel and the resulting suspension was irradiated in Personal Chemistry Smith Synthesizer (150 °C for 180s; 300 W). The resulting solution was evaporated to dryness. The residue was dissolved in 1.5 mL of a 1:1 mixture of DMSO/MeOH and purified by preparative reverse-phase HPLC. MS (DCI/NH₃) m/z 419 [M+H]⁺.

Example 292

cis-N-{4-[(2-amino-7-chloroquinolin-4-yl)amino]cyclohexyl}-3,5-difluorobenzamide

Example 292A

cis-N⁴-(4-aminocyclohexyl)-7-chloroquinoline-2,4-diamine

A mixture of 289C (500 mg, 2.35 mmol), 1,4-cyclohexanediamine (540 mg, 4.70 mmol), sodium t-butoxide (275 mg, 2.86 mmol), tris(dibenzylideneacetone)-dipalladium(0) (55 mg, 0.06 mmol) and (R)-(+)-2,2'-bis(diphenylphosphinol)-1,1'-binaphthyl was heated at 90°C in 1,2-dimethoxyethane (5mL) for 6 hours, cooled to room temperature, filtered. The 1,2-dimethoxyethane was removed via vacuum and the residue was purified by high throughput HPLC to provide the desired compound as its trifluoroacetic acid salt. MS (ESI(+))Q1MS m/z 291 (M+H)⁺.

Example 292B

cis-N-{4-[(2-amino-7-chloroquinolin-4-yl)amino]cyclohexyl}-3,5-difluorobenzamide

A mixture of example 292A (40 mg, 0.14 mmol), 3,5-difluorobenzoic acid (26 mg, 0.16 mmol), 1-hydroxybenzotriazole (25 mg, 0.16 mmol), 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide (31 mg, 0.16 mmol) and N-methyl-morpholine (36 µL, 0.33 mmol) in 2

mL N,N-dimethylformamide was shaken for 18 hours. N,N-Dimethylformamide was removed via vacuum and the residue was purified by high throughput HPLC to provide the desired compound. MS (ESI(+))Q1MS m/z 431 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 12.39 (s, 1 H), 8.40 (d, 1 H), 8.32 (d, 1 H), 7.73 (s, 2H), 7.50-7.60 (m, 3H), 7.48 (dd, 1 H), 7.45 (dd, 1H), 5.91 (s, 1 H), 3.99 (s, 1 H), 3.60 (s, 1 H), 1.93-2.15 (m, 4 H), 1.48-1.85 (m, 4 H).

Example 293

cis-N-{4-((2-amino-7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dichlorobenzamide

The titled compound was prepared according to the methods described in example 292, substituting 3,5-difluorobenzoic acid for 3,5-dichlorobenzoic acid. (ESI(+))Q1MS m/z 463 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 13.60 (s, 1 H), 8.41 (d, 1 H), 8.39 (d, 1 H), 7.87-7.91 (m, 4H), 7.67 (m, 2H), 7.58 (dd, 1 H), 7.50 (dd, 1H), 5.91 (s, 1 H), 3.98 (s, 1 H), 3.60 (s, 1 H), 1.90-2.00 (m, 4 H), 1.64-1.85 (m, 4 H).

Example 294

cis-N-{4-((2-amino-7-chloroquinolin-4-yl)amino)cyclohexyl}-4-phenoxybutanamide

The titled compound was prepared according to the methods described in example 292, substituting 3,5-difluorobenzoic acid for 4-phenoxybutanoic acid. (ESI(+))Q1MS m/z 453 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 12.31 (s, 1 H), 8.40 (d, 1 H), 7.76 (d, 1 H), 7.67 (s, 2H), 7.65 (d, 1H), 7.57 (d, 1 H), 7.48 (dd, 1H), 7.27 (m, 2H), 6.92 (m, 3H), 5.88 (s, 1 H), 3.97 (t, 2H), 3.81 (s, 1 H), 3.50 (s, 1H), 2.29 (t, 2H), 1.90-2.00 (m, 4 H), 1.60-1.85 (m, 6 H).

Example 295

cis-7-chloro-N-4-((4-((3-(trifluoromethyl)benzyl)amino)cyclohexyl)quinoline-2,4-diamine

A solution of example 292A (40 mg, 0.14 mmol), 3-trifluoromethylbenzaldehyde (36 mg, 0.21 mmol), sodium cyanoborohydride (1M THF solution, 0.41 mL, 0.41 mmol) in 2 mL tetrahydrofuran (THF) was shaken for 18 hours. THF was removed via vacuum and the residue was purified by high throughput HPLC to provide the desired compound as its trifluoroacetic acid salt. MS (ESI(+))Q1MS m/z 449 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 12.68 (s, 1 H), 8.95 (s, 2H), 8.42 (d, 1 H), 7.95 (d, 1 H), 7.87 (s, 1H), 7.82 (m, 1H), 7.70 (m, 1H), 7.59 (d, 1 H), 7.49 (dd, 1H), 5.90 (s, 1 H), 4.33 (s, 2H), 3.75 (s, 1 H), 2.05-2.15 (m,

2H), 1.92-2.01 (m, 2H), 1.82-1.92 (m, 2H), 1.71-1.85 (m, 2H).

Example 296

cis-7-chloro-N-(4-(4-((3-(trifluoromethoxy)benzyl)amino)cyclohexyl)quinoline-2,4-diamine

The titled compound was prepared according to the methods described in example 295, substituting 3,5-difluorobenzaldehyde for 3-trifluoromethoxybenzaldehyde. MS (ESI(+))Q1MS m/z 465 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 12.78 (s, 1 H), 9.01 (s, 2H), 8.43 (d, 1 H), 7.91 (s, 1H), 7.55-7.65 (m, 3H), 7.40-7.52 (m, 2H), 5.91 (s, 1 H), 4.29 (s, 2H), 3.75 (s, 1 H), 2.05-2.15 (m, 2H), 1.92-2.01 (m, 2H), 1.82-1.92 (m, 2H), 1.71-1.85 (m, 2H).

Example 297

cis-7-chloro-N-(4-(4-((3,5-dimethylbenzyl)amino)cyclohexyl)quinoline-2,4-diamine

The titled compound was prepared according to the methods described in example 295, substituting 3,5-difluorobenzaldehyde for 3,5-dimethylbenzaldehyde. MS (ESI(+))Q1MS m/z 409 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 12.80 (s, 1 H), 8.88 (s, 1H), 8.82 (s, 1H), 8.42 (d, 1 H), 7.92 (s, 1H), 7.58 (d, 1 H), 7.46 (dd, 1H), 7.45 (d, 1 H), 7.15 (s, 1H), 7.13(s, 1H), 7.06(s, 1H), 5.90 (s, 1 H), 4.11 (s, 2H), 3.75 (s, 1 H), 2.29 (s, 6H), 1.62-2.12 (m, 8H).

Example 298

cis-7-chloro-N-(4-(4-((3,5-dichlorobenzyl)amino)cyclohexyl)quinoline-2,4-diamine

The titled compound was prepared according to the methods described in example 295, substituting 3,5-difluorobenzaldehyde for 3,5-dichlorobenzaldehyde. MS (ESI(+))Q1MS m/z 409 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 12.73 (s, 1 H), 8.94 (s, 2H), 8.42 (d, 1 H), 7.89 (s, 1H), 7.62-7.67 (m, 3H), 7.59 (d, 1 H), 7.45-7.50 (m, 2H), 5.91 (s, 1 H), 4.24 (s, 2H), 3.75 (s, 1 H), 1.62-2.12 (m, 8H).

Example 299

cis-N-(7-chloroquinolin-4-yl)-N'-pyridin-2-ylcyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example

140, substituting 2-bromopyridine for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 353 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 8.94 (d, 1 H), 8.77 (d, 1 H), 8.59 (d, 1 H), 7.99 (d, 1 H), 7.93 (m, 3 H), 7.82 (dd, 1 H), 7.20 (d, 1 H), 7.00 (d, 1 H), 6.87 (m, 1 H), 3.89-4.11 (br.s, 2 H), 1.69-2.23 (br.s, 8 H).

Example 300

cis-N-(7-chloroquinolin-4-yl)-N'-isoquinolin-4-ylcyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 4-bromoisoquinoline for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 403 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 9.00 (s, 1 H), 8.94 (d, 1 H), 8.78 (d, 1 H), 8.72 (d, 1 H), 8.58 (d, 1 H), 8.37 (d, 1 H), 8.09 (t, 1 H), 8.01 (d, 1 H), 7.96 (t, 1 H), 7.83 (s, 1 H), 7.80 (dd, 1 H), 7.03 (d, 1 H), 6.98 (br.s, 1 H), 3.99-4.20 (br.s, 1 H), 3.88 (br.s, 1 H), 1.96-2.18 (m, 4 H), 1.73-1.96 (m, 4 H).

Example 301

cis-N-(7-chloroquinolin-4-yl)-N'-quinolin-3-ylcyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 3-bromoquinoline for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 403 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 8.95 (d, 1 H), 8.73 (d, 1 H), 8.61 (d, 1 H), 8.57 (d, 1 H), 7.92 (d, 1 H), 7.81 (m, 2 H), 7.71 (d, 1 H), 7.41 (m, 2 H), 7.19 (s, 1 H), 7.04 (d, 1 H), 6.35 (br.s, 1 H), 3.89-4.15 (br.s, 2 H), 3.89-4.15 (m, 8 H).

Example 302

cis-N-(7-chloroquinolin-4-yl)-N'-{(5-(4-nitrophenyl)-2-furyl)methyl}cyclohexane-1,4-diamine

The title compound was prepared according to method described in Example 141, substituting 5-(4-Nitrophenyl)furfuryl alcohol for 4-fluorobenzyl alcohol. MS(ESI) m/e 477 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.75 (dd, 1 H), 8.60 (dd, 1 H), 8.33 (d, 2 H), 8.01 (d, 2 H), 7.97 (d, 1 H), 7.96 (d, 1 H), 7.82 (dt, 1 H), 7.71 (dd, 1 H), 7.36 (d, 1 H), 6.95 (d, 1 H), 6.86 (d, 1 H), 4.11 (m, 2 H), 1.72-2.15 (m, 10 H).

Example 304*cis*-N-(7-chloroquinolin-4-yl)-N'-{((2R)-1-(4-nitrophenyl)pyrrolidin-2-yl)methyl}cyclohexane-1,4-diamine

The title compound was prepared according to method described in Example 141, substituting (S)-(-)-1-(4-Nitrophenyl)-2-pyrrolidinemethanol for 4-fluorobenzyl alcohol. MS(ESI) m/e 480 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.74 (d, 1 H), 8.48 (d, 1 H), 8.24 (d, 1 H), 8.10 (m, 2 H), 7.82 (d, 2 H), 6.81 (d, 2 H), 4.11-4.42 (m, 2 H), 3.87-4.12 (m, 2 H), 3.55-3.84 (m, 2 H), 3.51 (m, 1 H), 3.13-3.44 (m, 3 H), 2.98 (m, 1 H), 1.54-2.28 (m, 10 H).

Example 305*cis*-3,5-difluoro-N-(4-(quinolin-4-ylamino)cyclohexyl)benzamide

The titled compound was prepared according to the method described in Example 278 by substituting 4-chloroquinoline for 4-chloro-6-fluoro-2-trifluoromethyl-quinoline. MS (ESI(+))Q1MS m/z 382 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.71-8.63 (m, 2 H), 8.59-8.53 (m, 1 H), 8.30 (d, 1 H), 8.00-7.87 (m, 3 H), 7.78-7.70 (ddd, 1 H), 7.63-7.55 (m, 2 H), 7.50-7.42 (m, 1 H), 6.98 (d, 1 H), 4.05-3.95 (m, 2 H), 2.05-1.63 (m, 8 H).

Example 306*cis*-tert-butyl (2R)-2-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)methylpyrrolidine-1-carboxylate

The title compound was prepared according to method described in Example 141, substituting Boc-Prolinol for 4-fluorobenzyl alcohol. MS(ESI) m/e 459 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.74 (d, 1 H), 8.61 (d, 1 H), 7.97 (d, 1 H), 7.78 (dd, 1 H), 6.95 (d, 1 H), 3.95-4.21 (m, 2 H), 3.78 (m, 2 H), 2.95-3.64 (m, 6 H), 1.99-2.25 (m, 4 H), 1.75-1.99 (m, 10 H), 1.56 (m, 1 H), 1.24-1.50 (m, 5 H).

Example 307*cis*-N-(7-chloroquinolin-4-yl)-N'-1,4-dithiaspiro(4.5)dec-8-ylcyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 1,4-Dithiaspiro(4.5)decan-8-ol for 4-fluorobenzyl alcohol. MS(ESI) m/e 448 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.73 (d, 1 H), 8.60 (d, 1 H), 7.96 (d, 1 H), 7.79 (dd, 1 H), 6.93 (d, 1 H), 1.96-2.18 (m, 14 H), 1.84 (m, 8 H), 1.59 (m, 3 H).

Example 308

cis-N-(7-chloroquinolin-4-yl)-N'-((6-methylpyridin-2-yl)methyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 6-Methyl-2-pyridinemethanol for 4-fluorobenzyl alcohol. MS(ESI) m/e 381 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.74 (d, 1 H), 8.61 (d, 1 H), 7.97 (d, 1 H), 7.68-7.88 (m, 3 H), 7.29 (dt, 1 H), 6.95 (d, 1 H), 4.56 (m, 2 H), 4.33 (m, 2 H), 2.50 (s, 3 H), 1.66-2.22 (m, 10 H).

Example 309

cis-N-(7-chloroquinolin-4-yl)-N'-(2-thien-3-ylethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 2-(3-Thienyl)ethanol for 4-fluorobenzyl. MS(ESI) m/e 386 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.75 (d, 1 H), 8.61 (d, 1 H), 7.97 (d, 1 H), 7.81 (dd, 1 H), 7.54 (m, 1 H), 7.35 (d, 1 H), 7.09 (dd, 1 H), 6.95 (d, 1 H), 4.09 (s, 1 H), 3.62 (m, 1 H), 2.96 (m, 2 H), 2.73 (m, 2 H), 1.69-2.19 (m, 10 H).

Example 310

cis-N-(7-chloroquinolin-4-yl)-N'-{((2S)-1-(2-methoxybenzoyl)pyrrolidin-2-yl)methyl}cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting (R)-(+)-1-(2-Methoxybenzoyl)-2-pyrrolidinemethanol for 4-fluorobenzyl alcohol. MS(ESI) m/e 493 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.70 (d, 1 H), 8.46 (d, 1 H), 8.22 (d, 1 H), 7.78 (dd, 1 H), 7.43 (m, 1 H), 7.27 (dd, 1 H), 7.11 (d, 1 H), 7.01 (m, 1 H), 6.81 (d, 1 H), 4.21-4.42 (m, 2 H), 3.79 (m, 3 H), 3.79 (s, 3 H), 3.08-3.47 (m, 6 H), 1.51-2.23 (m, 10 H).

Example 311

cis-N-(7-chloroquinolin-4-yl)-N'-(thien-3-ylmethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3-Thiophenemethanol for 4-fluorobenzylalcohol. MS(ESI) m/e 372 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.75 (d, 1 H), 8.61 (d, 1 H), 7.97 (d, 1 H), 7.83 (m, 1

H), 7.73 (m, 1 H), 7.65 (m, 1 H), 7.26 (dd, 1 H), 6.94 (d, 1 H), 3.21 (m, 2 H), 2.07 (m, 2 H), 1.70-2.12 (m, 10 H).

Example 312

cis-N-(7-chloroquinolin-4-yl)-N'-(2-thien-2-ylethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 2-(2-Thienyl)ethanol for 4-fluorobenzylalcohol. MS(ESI) m/e 386 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.75 (d, 1 H), 8.60 (d, 1 H), 7.97 (d, 1 H), 7.81 (dd, 1 H), 7.43 (m, 1 H), 7.29 (dd, 1 H), 7.01 (m, 1 H), 6.94 (m, 1 H), 4.08 (s, 1 H), 3.61 (t, 2 H), 3.19 (m, 1 H), 2.92 (t, 2 H), 1.69-2.16 (m, 10 H).

Example 313

cis-N-(7-chloroquinolin-4-yl)-N'-(thien-2-ylmethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting Thiophene-2-methanol for 4-fluorobenzylalcohol. MS(ESI) m/e 372 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.75 (d, 1 H), 8.61 (d, 1 H), 7.98 (d, 1 H), 7.82 (m, 1 H), 7.66 (m, 1 H), 7.32 (d, 1 H), 7.13 (m, 1 H), 6.94 (d, 1 H), 4.47 (s, 1 H), 3.27 (s, 1 H), 2.53 (m, 2 H), 1.70-2.14 (m, 10 H).

Example 314

cis-6-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1,3-dimethylpyrimidine-2,4(1H,3H)-dione

The titled compound was prepared according to the method described in Example 3 by substituting 6-chloro-1,3-dimethyluracil for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 414 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.80-8.75 (m, 1 H), 8.70 (d, 1 H), 8.57 (dd, 1 H), 7.95 (d, 1 H), 7.80 (dd, 1 H), 7.00 (d, 1 H), 6.02-5.95 (m, 1 H), 4.81 (s, 1 H), 4.06-3.97 (m, 1 H), 3.61-3.51 (m, 1 H), 3.40 (s, 3 H), 3.10 (s, 3 H), 2.02-1.70 (m, 8 H).

Example 315cis-6-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)pyrimidine-2,4(1H,3H)-dione

The titled compound was prepared according to the method described in Example 3 by substituting 4-chlorouracil for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+)) Q1MS m/z 386(M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 10.22 (s, 1 H), 9.75 (s, 1 H), 8.90-8.84 (m, 1 H), 8.71 (d, 1 H), 8.60-8.55 (m, 1 H), 7.94 (d, 1 H), 7.82 (dd, 1 H), 7.00 (d, 1 H), 6.17 (d, 1 H), 4.48 (s, 1 H), 4.00-3.92 (m, 1 H), 3.61-3.51 (m, 1 H), 2.02-1.70 (m, 8 H).

Example 316cis-N-(7-chloroquinolin-4-yl)-N'-(3-(6-methylpyridin-2-yl)propyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 6-Methyl-2-pyridinepropanol for 4-fluorobenzylalcohol. MS(ESI) m/e 409 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.75 (d, 1 H), 8.63 (d, 1 H), 8.61 (d, 1 H), 8.53 (m, 1 H), 7.97 (d, 1 H), 7.82 (dd, 1 H), 7.25 (m, 1 H), 6.95 (d, 1 H), 4.08 (s, 1 H), 3.03 (s, 1 H), 2.87 (m, 2 H), 2.54 (s, 3 H), 2.35-2.60 (m, 4 H), 1.64-2.21 (m, 10 H).

Example 317cis-N-(7-chloroquinolin-4-yl)-N'-(3-furylmethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3-Furanmethanol for 4-fluorobenzylalcohol. MS(ESI) m/e 356 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.75 (d, 1 H), 8.60 (d, 1 H), 7.97 (m, 1 H), 7.82 (m, 2 H), 7.76 (m, 1 H), 6.95 (d, 1 H), 6.66 (s, 1 H), 4.10 (s, 1 H), 3.22 (s, 1 H), 2.52 (m, 2 H), 1.70-2.15 (m, 10 H).

Example 318cis-N-(7-chloroquinolin-4-yl)-N'-(3-pyridin-2-ylpropyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 2-Pyridinepropanol for 4-fluorobenzylalcohol. MS(ESI) m/e 395 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 8.75 (d, 1 H), 8.64 (d, 1 H), 8.61 (d, 1 H), 8.56 (d, 1 H), 7.97 (d, 1 H), 7.84 (m, 1 H), 7.36 (m, 2 H), 6.95 (d, 1 H), 3.25 (m, 2 H), 3.03 (m, 2 H), 2.89 (m, 2 H), 2.51 (m, 2 H), 1.68-2.21 (m, 10 H).

Example 319*cis*-N-(7-chloroquinolin-4-yl)-N'-(2-(2-methyl-5-nitro-1H-imidazol-1-yl)ethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting Metronidazole for 4-fluorobenzylalcohol. MS(ESI) m/e 429 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.77 (d, 1 H), 8.61 (d, 1 H), 8.08 (s, 1 H), 7.98 (d, 1 H), 7.80 (dd, 1 H), 6.96 (d, 1 H), 4.59 (m, 2 H), 4.09 (s, 1 H), 3.68 (s, 1 H), 3.37 (m, 2 H), 2.54 (s, 3 H), 1.72-2.16 (m, 10 H).

Example 320*cis*-N-(7-chloroquinolin-4-yl)-N'-(3-pyridin-3-ylpropyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 3-Pyridinepropanol for 4-fluorobenzylalcohol. MS(ESI) m/e 395 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.75 (d, 1 H), 8.61 (d, 1 H), 8.57 (m, 5 H), 7.97 (d, 1 H), 7.80 (dd, 1 H), 6.95 (d, 1 H), 3.25 (s, 1 H), 2.86-3.08 (m, 2 H), 2.72 (m, 2 H), 2.51 (m, 2 H), 1.68-2.21 (m, 10 H).

Example 321*cis*-N-(7-chloroquinolin-4-yl)-N'-{((4R,5S)-2-methyl-5-phenyl-4,5-dihydro-1,3-oxazol-4-yl)methyl}cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting (4S,5S)-(-)-2-Methyl-5-phenyl-2-oxazoline-4-methanol for 4-fluorobenzylalcohol. MS(ESI) m/e 349 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.76 (d, 1 H), 8.59 (d, 1 H), 8.36 (d, 1 H), 7.81 (dd, 1 H), 7.81 (m, 1 H), 7.40 (m, 2 H), 7.33 (m, 2 H), 6.93 (d, 1 H), 2.24 (s, 3 H), 2.01 (m, 2 H), 1.70-1.91 (m, 10 H), 1.63 (m, 2 H), 1.47 (m, 2 H).

Example 322*cis*-N-(7-chloroquinolin-4-yl)-N'-(2-(4-methyl-1,3-thiazol-5-yl)ethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 4-Methyl-5-thiazoleethanol for 4-fluorobenzylalcohol. MS(ESI) m/e 401

(M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.91 (s, 1 H), 8.75 (d, 1 H), 8.61 (d, 1 H), 7.97 (d, 1 H), 7.82 (dd, 1 H), 6.96 (d, 1 H), 4.08 (s, 1 H), 3.33 (s, 1 H), 2.52 (m, 2 H), 2.38 (s, 3 H), 2.37 (m, 2 H), 1.72-2.19 (m, 10 H).

Example 323

cis-N-(7-chloroquinolin-4-yl)-N'-(tetrahydrofuran-2-ylmethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting Tetrahydrofurfuryl alcohol for 4-fluorobenzylalcohol. MS(ESI) m/e 360 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.72 (d, 1 H), 8.60 (d, 1 H), 7.97 (d, 1 H), 7.81 (dd, 1 H), 6.92 (d, 1 H), 4.09 (m, 2 H), 3.82 (m, 2 H), 3.73 (m, 2 H), 3.11 (m, 2 H), 2.96 (m, 1 H), 1.65-2.15 (m, 10 H), 1.57 (m, 2 H).

Example 324

cis-N-(7-chloroquinolin-4-yl)-N'-(pyridin-3-ylmethyl)cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting Pyridine-3-methanol for 4-fluorobenzylalcohol. MS(ESI) m/e 367 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.75 (d, 1 H), 8.61 (d, 1 H), 8.54 (m, 4 H), 7.97 (d, 1 H), 7.80 (dd, 1 H), 6.95 (d, 1 H), 4.08 (s, 1 H), 3.59 (s, 1 H), 2.98 (m, 2 H), 2.74 (m, 2 H), 2.50 (m, 2 H), 1.69-2.22 (m, 10 H).

Example 325

cis-N-(7-chloroquinolin-4-yl)-N'-{2-(3-(6-methylpyridin-2-yl)propoxy)ethyl}cyclohexane-1,4-diamine

The titled compound was prepared according to method described in Example 141, substituting 2-(3-(6-Methyl-2-pyridyl)propoxy)ethanol for 4-fluorobenzylalcohol. MS(ESI) m/e 453 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.74 (d, 1 H), 8.61 (d, 1 H), 7.97 (m, 1 H), 7.84 (m, 1 H), 7.71 (m, 1 H), 7.48 (td, 1 H), 7.24 (td, 1 H), 6.94 (d, 1 H), 2.74-3.00 (m, 4 H), 2.54 (s, 3 H), 2.44-2.68 (m, 6 H), 2.09 (m, 2 H), 1.67-2.01 (m, 10 H).

Example 326*cis-N-(7-chloroquinolin-4-yl)-N'-{((2R)-1-(2-methoxybenzoyl)pyrrolidin-2-yl)methyl}cyclohexane-1,4-diamine*

The title compound was prepared according to method described in Example 141, substituting (S)-(-)-1-(2-methoxybenzoyl)-2-pyrrolidinemethanol for 4-fluorobenzyl alcohol. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.73 (d, 1 H), 8.60 (d, 1 H), 7.96 (d, 1 H), 7.80 (dd, 1 H), 7.27 (m, 1 H), 6.99 (m, 5 H), 4.31 (m, 2 H), 4.08 (m, 2 H), 3.78 (s, 3 H), 2.90-3.30 (m, 6 H), 1.56-2.04 (m, 10 H); MS(ESI) m/e 493 (M+H)⁺.

Example 327*cis-N-(7-chloroquinolin-4-yl)-N'-(tetrahydrofuran-3-ylmethyl)cyclohexane-1,4-diamine*

The title compound was prepared according to method described in Example 141, substituting tetrahydro-3-furanmethanol for 4-fluorobenzyl alcohol. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.76 (d, 1 H), 8.61 (d, 1 H), 7.98 (d, 1 H), 7.80 (dd, 1 H), 6.95 (d, 1 H), 4.10 (s, 1 H), 3.76 (m, 2 H), 3.66 (m, 2 H), 3.00 (m, 2 H), 2.52 (m, 2 H), 1.69-2.23 (m, 10 H), 1.63 (m, 2 H); MS(ESI) m/e 360 (M+H)⁺.

Example 328*cis-N-(7-chloroquinolin-4-yl)-N'-(2-furylmethyl)cyclohexane-1,4-diamine*

The title compound was prepared according to method described in Example 141, substituting furfuryl alcohol for 4-fluorobenzyl alcohol. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.74 (d, *J* = 9.1 Hz, 1 H), 8.60 (d, *J* = 7.2 Hz, 1 H), 7.97 (d, *J* = 2.2 Hz, 1 H), 7.82 (d, 1 H), 7.81 (m, 1 H), 6.94 (d, 1 H), 6.66 (m, 1 H), 6.56 (m, 1 H), 4.31 (s, 1 H), 3.22 (s, 1 H), 2.50 (m, 2 H), 1.68-2.11 (m, 10 H); MS(ESI) m/e 356 (M+H)⁺.

Example 329*cis-N-(7-chloroquinolin-4-yl)-N'-((3-methyloxetan-3-yl)methyl)cyclohexane-1,4-diamine*

The title compound was prepared according to method described in Example 141, substituting 3-Methyl-3-oxetanemethanol for 4-fluorobenzyl alcohol. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.72 (d, 1 H), 8.59 (d, 1 H), 7.96 (d, 1 H), 7.71 (d, 1 H), 6.91 (d, 1 H), 5.11 (s, 1 H), 4.39 (m, 2 H), 3.91-4.17 (m, 4 H), 2.99 (s, 1 H), 1.70-2.22 (m, 10 H), 0.91 (s, 3 H); MS(ESI) m/e 360 (M+H)⁺.

Example 330*cis*-N-(7-chloroquinolin-4-yl)-N'-(3-pyridin-4-ylpropyl)cyclohexane-1,4-diamine

The title compound was prepared according to method described in Example 141, substituting 4-Pyridinepropanol for 4-fluorobenzyl alcohol. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.79 (d, 1 H), 8.74 (d, 1 H), 7.98 (d, 1 H), 7.82 (d, 2 H), 7.76 (d, 1 H), 7.71 (d, 2 H), 6.95 (d, 1 H), 4.16 (s, 1 H), 3.12 (m, 1 H), 2.67-2.91 (m, 6 H), 1.71-2.16 (m, 10 H); MS(ESI) m/e 395 (M+H)⁺.

Example 331*cis*-N-(7-chloroquinolin-4-yl)-N'-((3-ethyloxetan-3-yl)methyl)cyclohexane-1,4-diamine

The title compound was prepared according to method described in Example 141, substituting 3-ethyl-3-oxetanemethanol for 4-fluorobenzyl alcohol. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.76 (d, 1 H), 8.61 (d, 1 H), 7.97 (d, 1 H), 7.79 (dd, 1 H), 6.92 (d, 1 H), 3.42 (s, 1 H), 3.01 (m, 1 H), 2.13 (m, 2 H), 2.00 (m, 2 H), 1.59-2.05 (m, 10 H), 0.89 (s, 3 H), 0.85-1.06 (m, 4 H); MS(ESI) m/e 374 (M+H)⁺.

Example 332*cis*-N-(7-chloroquinolin-4-yl)-N'-(pyridin-2-ylmethyl)cyclohexane-1,4-diamine

The title compound was prepared according to method described in Example 141, substituting pyridine-2-methanol for 4-fluorobenzyl alcohol. MS(ESI) m/e 367 (M+H)⁺.

Example 333*cis*-N-(7-chloroquinolin-4-yl)-N'-(1H-imidazol-4-ylmethyl)cyclohexane-1,4-diamine

The title compound was prepared according to method described in Example 141, substituting 4-(hydroxymethyl)imidazole hydrochloride for 4-fluorobenzyl alcohol. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.75 (d, 1 H), 8.69 (d, 1 H), 8.60 (d, 1 H), 8.59 (d, 1 H), 7.97 (d, 1 H), 7.81 (d, 1 H), 6.96 (d, 1 H), 4.03 (s, 1 H), 4.03 (m, 1 H), 3.29 (m, 1 H), 2.49 (m, 2 H), 1.69-2.18 (m, 10 H); MS(ESI) m/e 356 (M+H)⁺.

Example 334*cis*-N-(7-chloroquinolin-4-yl)-N'-{((4S)-2,2-dimethyl-1,3-dioxolan-4-

yl)methyl}cyclohexane-1,4-diamine

The title compound was prepared according to method described in Example 141, substituting (S)-(+)-2,2-Dimethyl-1,3-dioxolane-4-methanol for 4-fluorobenzyl alcohol. ¹H NMR (500 MHz, DMSO-D₆) δ ppm 8.73 (d, 1 H), 8.61 (d, 1 H), 7.98 (d, 1 H), 7.82 (dd, 1 H), 6.94 (d, 1 H), 3.81 (s, 1 H), 3.26 (s, 1 H), 2.98-3.19 (m, 2 H), 2.76-2.98 (m, 2 H), 2.51 (m, 1 H), 2.50 (s, 6 H), 1.63-2.15 (m, 10 H); MS(ESI) m/e 390 (M+H)⁺.

Example 335cis-N-1,3-benzothiazol-2-yl-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 3 by substituting 2-chlorobenzothiazole for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 409 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.94-8.89 (m, 1 H), 8.72 (d, 1 H), 8.59-8.54 (m, 1 H), 8.15-8.05 (m, 1 H), 7.91 (d, 1 H), 7.81 (dd, 1 H), 7.71 (d, 1 H), 7.40 (d, 1 H), 7.23 (ddd, 1 H), 7.06-6.98 (m, 2 H), 4.04-3.94 (m, 2 H), 2.17-1.77 (m, 8 H).

Example 336cis-6-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-3-methylpyrimidine-2,4(1H,3H)-dione

The titled compound was prepared according to the method described in Example 3 by substituting 6-chloro-3-methyluracil for 4-chloro-2,8-bis(trifluoromethyl)-quinoline. MS (ESI(+))Q1MS m/z 400(M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 10.03 (br s, 1 H), 8.87 (d, 1 H), 8.72 (d, 1 H), 8.58 (d, 1 H), 7.95 (d, 1 H), 7.82 (dd, 1 H), 7.01 (d, 1 H), 6.15 (d, 1 H), 4.67 (d, 1 H), 4.00-3.57 (m, 2 H), 3.03 (s, 3 H), 1.90-1.70 (m, 8 H).

Example 337(1S,2R,4S,5R)-N,N'-bis(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamineExample 337 A(1S,2R,4S,5R)-2,5-dimethylcyclohexane-1,4-diamine

A solution of 1,3-dimethylphenylene-2,4-diamine (5g, 36.7mmol), 5%Ru on Al₂O₃ in ethanol (100 ml) was shaken under 950 psi hydrogen pressure at 100°C for 72 hours, filtered

and concentrated under reduced pressure to provide the titled compound. MS(CI(+))Q1MS m/z 143 ($M+H$)⁺.

Example 337 B

(1*S*,2*R*,4*S*,5*R*)-*N,N*-bis(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 4-bromo-7-chloroquinoline for 1-bromo-3,5-difluorobenzene and (1*S*,2*R*,4*S*,5*R*)-2,5-dimethylcyclohexane-1,4-diamine for Example 23A. MS(ESI(+))Q1MS m/z 465 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.87 (d, 2 H), 8.60 (d, 2 H), 8.32 (br.s, 2 H), 7.95 (d, 2 H), 7.85 (dd, 2 H), 7.05 (d, 2 H), 4.03-4.37 (br.s, 2 H), 2.27 (m, 4 H), 1.90 (m, 2 H), 1.02 (d, 6 H).

Example 338

(1*S*,2*R*,4*S*,5*R*)-*N*-(7-chloroquinolin-4-yl)-*N'*-(3,5-dimethylphenyl)-2,5-dimethylcyclohexane-1,4-diamine

Example 338 A

(1*S*,2*R*,4*S*,5*R*)-*N*-(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamine

A mixture of 4,7-dichloroquinoline (500mg, 2.5mmol) and (1*S*,2*R*,4*S*,5*R*)-2,5-dimethylcyclohexane-1,4-diamine (750mg, 5.2 mmol) was heated at 150°C for 5 hours, cooled to room temperature, and flash chromatographed through silica gel column with dichloromethane and methanol (3:1 ratio by vol) to provide the titled compound. MS(ESI(+))Q1MS m/z 304 ($M+H$)⁺.

Example 338 B

(1*S*,2*R*,4*S*,5*R*)-*N*-(7-chloroquinolin-4-yl)-*N'*-(3,5-dimethylphenyl)-2,5-dimethylcyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 5-bromo-*m*-xylene for 1-bromo-3,5-difluorobenzene and (1*S*,2*R*,4*S*,5*R*)-*N*-(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamine for *N*-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine. ¹H NMR (300 MHz, DMSO) δ ppm 8.89 (d, 1 H), 8.56 (m, 2 H), 7.92 (d, 1 H), 7.82 (dd, 1 H), 6.99 (d, 1 H), 6.31 (s, 2 H), 6.17 (s, 1 H), 4.10 (br.s, 2 H), 2.14 (s, 6 H), 2.03-2.33 (m, 4 H), 1.69 (m, 2 H), 0.97 (br.d, 6 H). MS(ESI(+))Q1MS m/z 408 ($M+H$)⁺.

Example 339*N*-((1*S*,2*R*,4*S*,5*R*)-4-((7-chloroquinolin-4-yl)amino)-2,5-dimethylcyclohexyl)-3,5-difluorobenzamide

The titled compound was prepared according to the method described in Example 23 substituting (1*S*,2*R*,4*S*,5*R*)-*N*-(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamine for *N*-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine and 3,5-difluorobenzoic acid for indole-6-carboxylic acid. ¹H NMR (300 MHz, DMSO) δ ppm 8.87 (d, 1 H), 8.55 (t, 1 H), 8.07 (d, 1 H), 7.93 (d, 1 H), 7.83 (dd, 1 H), 7.42-7.64 (m, 4 H), 7.00 (d, 1 H), 4.00-4.20 (m, 2 H), 1.63-2.34 (m, 6 H), 1.03 (d, 3 H), 1.00 (d, 3 H). MS(ESI(+))Q1MS *m/z* 444 (M+H)⁺.

Example 3405-bromo-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-bromosalicylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 474 and 476 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.76-1.90 (m, 5 H) 1.97-2.05 (m, 2 H) 2.07 (s, 1 H) 4.00 (m, 1 H) 4.08 (m, 1 H) 6.93 (d, *J*=8.73 Hz, 1 H) 7.01 (d, *J*=7.18 Hz, 1 H) 7.56 (dd, *J*=8.74, 2.50 Hz, 1 H) 7.80 (dd, *J*=9.20, 2.03 Hz, 1 H) 7.94 (d, *J*=2.18 Hz, 1 H) 8.15 (d, *J*=2.50 Hz, 1 H) 8.56 (d, *J*=7.17 Hz, 1 H) 8.60 (d, *J*=5.93 Hz, 1 H) 8.71 (d, *J*=9.36 Hz, 1 H) 8.83 (d, *J*=7.17 Hz, 1 H).

Example 3413-bromo-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide

A mixture of 23A *cis*-*N,N'*-bis(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine (500 mg, 3.6 mmol), 3-bromo-5-fluorobenzoic acid (600 mg, 5.4 mmol), 1-hydroxybenzotriazole (245 mg, 3.6 mmol), 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide (348 mg, 3.6 mmol) in 30 mL dichloromethane was stirred for 3 hours. The reaction was incomplete. 3-bromo-5-fluorobenzoic acid (160 mg, 0.9 mmol), 1-hydroxybenzotriazole (61 mg, 0.9 mmol), 1-(3-dimethylaminopropyl)-3-ethylcarbodiimide (87 mg, 0.9 mmol) was added and the solution was allowed to stir overnight. The solution was then washed with 1N NaOH, dried (Na₂SO₄), and concentrated. The residue was purified by flash chromatography (10% methanol in dichloromethane) to provide 700 mg of pure compound, an 81% yield. MS (ESI(+))Q1MS *m/z* 477 (M+2H)⁺; ¹H NMR (300 MHz, MeOH) δ ppm 8.36-8.42 (m, 3 H), 7.95 (t, 1 H), 7.69-7.79 (m, 3 H), 7.45 (dd, 1H), 6.83 (d, 1H), 6.54 (d, 1 H), 3.95 (m, 1H), 3.68 (m, 1 H), 1.66-1.98 (m, 8 H).

Example 342

(1S,2R,4S,5R)-N,N'-bis(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 1, substituting 1,4-diamino-2,5-dimethylcyclohexane for 1,4-diaminocyclohexane. MS (ESI(+)) Q1MS m/z 465 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 1.02 (d, $J=6.44$ Hz, 6 H) 1.86-1.94 (m, 2 H) 2.22-2.37 (m, 4 H) 4.17-4.25 (br.s, 2 H) 7.05 (d, $J=7.46$ Hz, 2 H) 7.85 (dd, $J=9.15$, 2.03 Hz, 2 H) 7.96 (d, $J=2.37$ Hz, 2 H) 8.38 (d, $J=7.12$ Hz, 2 H) 8.60 (d, $J=7.12$ Hz, 2 H) 8.89 (d, $J=9.15$ Hz, 2 H).

Example 343

4-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-6-methyl-2H-chromen-2-one

To a conical microwave vessel (7.5 mL) equipped with a septum cap and a magnetic stirring bar was added a solution of a trifluoro-methanesulfonic acid 6-chloro-2-oxo-2H-chromen-4-yl ester (0.014 g; 0.043 mmol) in dry acetonitrile (1 mL) containing Et₃N (0.025 mL). Then, a solution of N-(7-chloro-quinolin-4-yl)-cyclohexane-1,4-diamine (0.0178 g; 1.5 eq.) in 1:1:1 mixture of acetonitrile/dichloromethane/DMF (1 mL) was added to the vessel and the resulting suspension was irradiated in Personal Chemistry Smith Synthesizer (150 °C for 180s; 300 W). The resulting solution was evaporated to dryness. The residue was dissolved in 1.5 mL of a 1:1 mixture of DMSO/MeOH and purified by preparative reverse-phase HPLC. MS (DCI/NH₃) m/z 433 [$M+H$]⁺.

Example 344

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methyl-2-phenylpentanamide

General procedure: Syntheses were performed using a PE Biosystems (Applied Biosystems) Solaris 530 organic synthesizer. Each of the 48 round bottom flasks was charged with 3 equivalents of PS-dicyclohexane carbodiimide resin (PS-DCC) supplied by Argonaut Technologies. The reaction block was then assembled and placed on the Solaris 530. The acid monomers (0.6 mmol) were each dissolved in *N,N*-dimethylacetamide (DMA) (3 mL). The amine core was dissolved in *N,N*-dimethylacetamide. Solutions of N-hydroxybenzotriazole in *N,N*-dimethylacetamide and diisopropylethylamine (DIEA) in DMA were placed on the instrument. The Solaris was primed with DMA then into each of the 48 vials containing PS-DCC resin was added 1.25 equivalents of each monomer solution, HOBt solution (0.75 mL, 1 eq), core solution (0.75 mL, 1 eq) and DIEA solution (0.75 mL, 3 eq). The reactions were heated to 55 °C overnight, checked by LC/MS, and transferred with

methanol to 20 mL vials containing 3 eq MP-Carbonate resin supplied by Argonaut Technologies. The MP-Carbonate resin was filtered and the reactions were concentrated to dryness under reduced pressure. The residues were dissolved in 1:1 dimethylsulfoxide/methanol and purified by reverse phase HPLC.

The titled compound was prepared using the procedure described above using *N*-(7-chloro-quinolin-4-yl)-cyclohexane-1,4-diamine and 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) *m/e* 450 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (t, *J* = 8.0 Hz, 1 H), 8.75 (d, *J* = 9.0 Hz, 1 H), 8.54 (d, *J* = 7.2 Hz, 1 H), 7.93 (m, 2 H), 7.80 (dd, *J* = 9.0, 1.9 Hz, 1 H), 7.37 (m, 2 H), 7.28 (t, *J* = 7.5 Hz, 2 H), 7.20 (t, *J* = 7.3 Hz, 1 H), 6.95 (dd, *J* = 7.2, 3.7 Hz, 1 H), 3.27 (dd, *J* = 19.2, 10.8 Hz, 1 H), 2.07 (m, 1 H), 1.74 (m, 8 H), 1.14 (m, 1 H), 0.94 (d, *J* = 6.6 Hz, 1 H), 0.90 (t, *J* = 7.3 Hz, 2 H), 0.84 (m, 1 H), 0.73 (t, *J* = 7.3 Hz, 1 H), 0.58 (d, *J* = 6.6 Hz, 2H).

Example 345

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-5-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-methylsalicylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 410 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.75-2.02 (m, 8 H) 2.27 (s, 3 H) 3.94-4.02 (m, 1 H) 4.02-4.10 (m, 1 H) 6.83 (d, *J* = 8.11 Hz, 1 H) 6.99 (d, *J* = 7.18 Hz, 1 H) 7.21 (dd, *J* = 8.42, 1.87 Hz, 1 H) 7.79 (m, 2 H) 7.92 (d, *J* = 2.18 Hz, 1 H) 8.45 (d, *J* = 6.24 Hz, 1 H) 8.56 (d, *J* = 7.18 Hz, 1 H) 8.69 (d, *J* = 9.05 Hz, 1 H) 8.74 (br.s, 1 H).

Example 346

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,2-diphenylacetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting diphenylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) *m/e* 470 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, *J* = 6.9 Hz, 1 H), 8.71 (d, *J* = 9.4 Hz, 1 H), 8.54 (d, *J* = 7.2 Hz, 1 H), 8.25 (d, *J* = 5.9 Hz, 1 H), 7.93 (d, *J* = 2.2 Hz, 1 H), 7.78 (dd, *J* = 9.0, 2.2 Hz, 1 H), 7.31 (m, 9 H), 7.23 (m, 2 H), 6.97 (d, *J* = 7.2 Hz, 1 H), 5.10 (s, 1 H), 1.83 (m, 6 H), 1.69 (m, 2 H).

Example 347

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2-hydroxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-fluorosalicic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 414 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.75-2.02 (m, 8 H) 3.95-4.03 (m, 1 H)

4.05-4.10 (m, 1 H) 6.94-7.00 (m, 2 H) 7.24-7.30 (m, 1 H) 7.78 (d, $J=2.18$ Hz, 1 H) 7.80 (d, $J=2.50$ Hz, 1 H) 7.92 (d, $J=1.87$ Hz, 1 H) 8.55 (m, 2 H) 8.68 (d, $J=9.05$ Hz, 1 H) 8.71-8.74 (br.s, 1 H).

Example 348

N-((1S,2R,4S,5R)-4-((7-chloroquinolin-4-yl)amino)-2,5-dimethylcyclohexyl)-3,5-difluorobenzamide

Example 348 A

N-(7-chloroquinolin-4-yl)-2,5-dimethyl-cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 23A, substituting 2,5-Dimethyl-cyclohexane-1,4-cis-diamine for 1,4-cyclohexanediamine. MS (ESI(+))Q1MS m/z 304 ($M+H$)⁺.

Example 348 B

N-((1S,2R,4S,5R)-4-((7-chloroquinolin-4-yl)amino)-2,5-dimethylcyclohexyl)-3,5-difluorobenzamide

The titled compound was prepared according to the methods described in Example 112, substituting Example 348A for example 23A. MS (ESI(+))Q1MS m/z 444 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO- D_6) δ ppm 0.93-1.04 (m, 6 H) 1.66-2.30 (m, 6 H) 4.03-4.17 (m, 2 H) 7.00 (d, $J=7.46$ Hz, 1 H) 7.45-7.61 (m, 2 H) 7.83 (dd, $J=9.16, 2.03$ Hz, 1 H) 7.93 (m, 1 H) 8.07 (d, $J=6.78$ Hz, 1 H) 8.55 (t, $J=7.29$ Hz, 2 H) 8.87 (d, $J=9.16$ Hz, 1 H).

Example 349

N-(7-chloroquinolin-4-yl)-N'-(2',5'-dimethyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 418 by substituting 2-methylboronic acid for phenylboronic acid. MS (ESI(+))Q1MS m/z 456 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.92 (m, 1 H), 8.69 (d, 1 H), 8.54 (m, 1H), 7.94 (m, 1H), 7.80 (dd, 1 H), 7.71-7.83 (m, 3H), 7.21-7.26 (m, 1H), 6.93-7.01 (m, 1H), 6.62 (dd, 1H), 6.48 (s, 1H), 6.40 (s, 1H), 6.32 (s, 1H), 3.7 (m, 1H), 3.54 (d, 1H), 2.29 (s, 3H), 2.25(s, 3H), 1.66-1.99 (m, 8H).

Example 350

3-(5-acetylthien-2-yl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide

To a solution of 5-acetyl-2-thiophene boronic acid (7.14 mg, 0.042 mmol), Pd(PPh₃)₂Cl₂ (~1 mol %), and cesium carbonate (16.4 mg, 0.05 mmol) in dimethoxyethane/water/ethanol (7/3/2) was added 3-bromo-N-{4-((7-chloroquinolin-4-

yl)amino)cyclohexyl}-5-fluorobenzamide (20 mg, 0.042 mmol). The solution was heated in the microwave at 160 °C for 5 minutes, concentrated, and purified by high throughput HPLC to provide the desired compound as its trifluoroacetic acid salt. MS (ESI(+))Q1MS m/z 522 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.73 (d, 1 H), 8.57 (d, 1 H), 8.39 (s, 1H), 8.05 (s, 1H), 8.01 (d, 1 H), 7.95 (d, 1H), 7.87 (dt, 1 H), 7.82 (d, 1H), 7.80 (d, 1H), 7.74 (d, 1H), 4.03 (m, 2H), 2.57 (s, 3H), 1.96-2.06 (m, 4H), 1.75-1.85 (m, 4H).

Example 351

(2R)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxy-2-phenylacetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting (R)-(-)-alpha-methoxyphenylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 424 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, J=7.2 Hz, 1 H), 8.70 (d, J=9.4 Hz, 1 H), 8.55 (d, J=7.2 Hz, 1 H), 7.94 (d, J=2.2 Hz, 1 H), 7.82 (dd, J=9.2, 2.0 Hz, 1 H), 7.70 (d, J=6.9 Hz, 1 H), 7.37 (m, 5 H), 6.98 (d, J=7.2 Hz, 1 H), 4.72 (s, 1 H), 3.96 (m, 1 H), 3.87 (m, 1 H), 3.30 (s, 3 H), 1.82 (m, 6 H), 1.68 (m, 2 H).

Example 352

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-5-methoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-methoxysalicylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 426 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 1.75-2.01 (m, 8 H) 3.74 (s, 3 H) 3.94-3.97 (m, 1 H) 4.05-4.13 (m, 1 H) 6.88 (d, J=9.05 Hz, 1 H) 6.94 (d, J=7.49 Hz, 1 H) 7.03 (dd, J=8.89, 2.96 Hz, 1 H) 7.49 (d, J=3.12 Hz, 1 H) 7.76 (d, J=8.73 Hz, 1 H) 7.90 (d, J=1.87 Hz, 1 H) 8.55 (m, 2 H) 8.66 (d, J=9.05 Hz, 1 H) 11.60 (s, 1 H).

Example 353

(2S)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxy-2-phenylacetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting (S)-(+)-alpha-methoxyphenylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 424 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, J=7.2 Hz, 1 H), 8.70 (d, J=9.4 Hz, 1 H), 8.55 (d, J=7.2 Hz, 1 H), 7.94 (d, J=2.2 Hz, 1 H), 7.82 (dd, J=9.2, 2.0 Hz, 1 H), 7.70 (d, J=6.9 Hz, 1 H), 7.37 (m, 5 H), 6.98 (d, J=7.2 Hz, 1 H), 4.72 (s, 1 H), 3.96 (m, 1 H), 3.87 (m, 1 H), 3.30 (s, 3 H), 1.82 (m, 6 H), 1.68 (m, 2 H).

Example 3544-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-chlorosalicylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 430 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.75-2.00 (m, 8 H) 3.98-4.01 (m, 1 H) 4.07 (m, 1 H) 6.97-7.01 (m, 3 H) 7.78 (dd, J=9.20, 2.03 Hz, 1 H) 7.93 (d, J=1.87 Hz, 1 H) 7.98 (d, J=8.42 Hz, 1 H) 8.52 (d, J=6.24 Hz, 1 H) 8.55 (d, J=7.18 Hz, 1 H) 8.69 (d, J=9.05 Hz, 1 H) 8.79 (d, J=6.86 Hz, 1 H).

Example 355N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}quinoline-3-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting quinoline-3-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 431 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.78-2.08 (m, 8 H) 4.01-4.11 (m, 2 H) 7.02 (d, J=7.18 Hz, 1 H) 7.71 (t, J=8.11 Hz, 1 H) 7.82 (dd, J=9.05, 2.18 Hz, 1 H) 7.88 (m, 1 H) 7.93 (d, J=2.18 Hz, 1 H) 8.10 (d, J=9.36 Hz, 2 H) 8.54 (dd, J=31.35, 6.40 Hz, 2 H) 8.73 (d, J=9.05 Hz, 1 H) 8.86 (m, 2 H) 9.31 (d, J=2.18 Hz, 1 H).

Example 356N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-3-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-methylsalicylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 410 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.73-2.06 (m, 8 H) 2.15 (s, 3 H) 3.95-4.11 (m, 2 H) 6.79 (t, J=7.64 Hz, 1 H) 6.98 (d, J=7.49 Hz, 1 H) 7.30 (d, J=7.49 Hz, 1 H) 7.80 (m, 2 H) 7.92 (d, J=1.87 Hz, 1 H) 8.41 (d, J=5.93 Hz, 1 H) 8.55 (d, J=7.18 Hz, 1 H) 8.70 (d, J=9.05 Hz, 1 H) 8.75 (d, J=6.24 Hz, 1 H).

Example 357N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,6-dimethoxynicotinamide

The titled compound was prepared according to the methods described in Example 23, substituting 2,6-dimethoxynicotinic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 441 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.74-2.01 (s, 8 H) 3.94 (s, 3 H) 3.94 (m, 2 H) 4.10 (s, 3 H) 6.54 (d, J=8.11 Hz, 1 H) 7.02 (d, J=7.49 Hz, 1 H) 7.82 (dd, J=9.05, 2.18 Hz, 1 H) 7.93 (d, J=1.87 Hz, 1 H) 7.97 (d, J=6.55 Hz, 1 H) 8.20 (d, J=8.11 Hz, 1 H) 8.56 (d, J=7.18 Hz, 1 H) 8.71 (d, J=9.05 Hz, 1 H) 8.84 (d, J=6.86 Hz, 1 H) 13.71 (s, 1 H).

Example 358N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylpentanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 4-methylpentanoic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 374 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.89 (d, J = 6.9 Hz, 1 H), 8.73 (d, J = 9.4 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.95 (d, J = 1.9 Hz, 1 H), 7.79 (dd, J = 9.2, 2.0 Hz, 1 H), 7.69 (d, J = 6.2 Hz, 1 H), 6.97 (d, J = 7.2 Hz, 1 H), 3.91 (m, 1 H), 3.80 (m, 1 H), 2.13 (t, J = 7.8 Hz, 2 H), 1.84 (m, 6 H), 1.65 (m, 2 H), 1.51 (m, 1 H), 1.42 (m, 2 H), 0.87 (d, J = 6.6 Hz, 6 H).

Example 359N-(2-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-2-oxo-1-ethyl)-2-hydroxybenzamide

The titled compound was prepared according to the procedure described in Example 344 by substituting o-hydroxyhippuric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 453 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 12.15 (s, 1 H), 9.00 (t, J = 5.6 Hz, 1 H), 8.87 (d, J = 7.2 Hz, 1 H), 8.73 (d, J = 9.0 Hz, 1 H), 8.55 (d, J = 6.9 Hz, 1 H), 7.95 (d, J = 5.6 Hz, 1 H), 7.93 (d, J = 1.9 Hz, 1 H), 7.88 (dd, J = 7.8, 1.6 Hz, 1 H), 7.81 (dd, J = 9.2, 2.0 Hz, 1 H), 7.40 (m, 1 H), 6.98 (d, J = 7.5 Hz, 1 H), 6.91 (m, 2 H), 3.98 (d, J = 5.3 Hz, 2 H), 3.92 (m, 1 H), 3.84 (m, 1 H), 1.85 (m, 6 H), 1.70 (m, 2 H).

Example 3603-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide

A mixture of Example 23A (15mg, 0.055 mmol), 3-chloro-5-fluorobenzoic acid (14mg, 0.083 mmol), solid supported dicyclohexanecarbodiimide(0.110 mmol), 1-hydroxy-7-azabenzotriazole (11.3 mg, .094mmol) 2.5 ml dimethylacetamide/dichloromethane (2/3) was shaken for 2 hours, and filtered. The filtrate was concentrated and the residue was purified by HPLC to provide the desired compound as its trifluoroacetic acid salt. MS (ESI(+))Q1MS m/z 432 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.84 (d, 1 H), 8.71 (d, 1 H), 8.56 (d, 1H), 8.35 (d, 1H), 7.95 (d, 1H), 7.83 (m, 1 H), 7.81 (dd, 1H), 7.69 (m, 1 H), 7.65 (dt, 1 H), 7.00 (d, 1H), 3.99 (m, 2H), 1.98-2.03 (m, 4H), 1.73-1.83 (m, 4H).

Example 361N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}pentanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting valeric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 360 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, J = 7.2 Hz, 1 H), 8.73 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.95 (d, J = 1.9 Hz, 1 H), 7.79 (dd, J = 9.0, 2.2 Hz, 1 H), 7.67

(d, $J = 5.9$ Hz, 1 H), 6.97 (d, $J = 7.5$ Hz, 1 H), 3.91 (m, 1 H), 3.81 (m, 1 H), 2.13 (t, $J = 7.3$ Hz, 2 H), 1.82 (m, 6 H), 1.65 (m, 2 H), 1.50 (m, 2 H), 1.29 (m, 2 H), 0.88 (t, $J = 7.3$ Hz, 3 H).

Example 362

3'-amino-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide

The titled compound was prepared according to the method described in Example 350 by substituting 3-aminobenzeneboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+)Q1MS m/z 522 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.85 (d, 1 H), 8.73 (d, 1 H), 8.57 (d, 1 H), 8.34 (s, 1H), 7.97 (d, 1H), 7.95 (m, 1 H), 7.80 (dd, 1H), 7.70 (d, 1 H), 7.59 (d, 1H), 7.31 (t, 1H), 7.20 (m, 2H), 7.00 (d, 1H), 6.91 (d, 1H), 4.03 (m, 2H), 3.97 (s, 1H), 3.17 (s, 1H), 1.97-2.05 (m, 4H), 1.75-1.84 (m, 4H).

Example 363

N-2-acetyl-N-1-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-L-leucinamide

The titled compound was prepared according to the procedure described in Example 344 by substituting N-acetyl-L-leucine for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 431 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, $J = 6.9$ Hz, 1 H), 8.75 (d, $J = 9.0$ Hz, 1 H), 8.55 (d, $J = 7.2$ Hz, 1 H), 7.93 (m, 2 H), 7.86 (d, $J = 6.2$ Hz, 1 H), 7.80 (dd, $J = 9.2, 2.0$ Hz, 1 H), 6.96 (d, $J = 7.5$ Hz, 1 H), 4.39 (m, 1 H), 3.89 (m, 1 H), 3.79 (m, 1 H), 1.84 (m, 9 H), 1.63 (m, 3 H), 1.43 (m, 2 H), 0.88 (dd, $J = 18.1, 6.6$ Hz, 6 H).

Example 364

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3,5-difluorophenyl)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3,5-difluorophenylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 430 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, $J = 6.9$ Hz, 1 H), 8.73 (d, $J = 9.0$ Hz, 1 H), 8.55 (d, $J = 7.2$ Hz, 1 H), 8.07 (d, $J = 5.9$ Hz, 1 H), 7.93 (d, $J = 1.9$ Hz, 1 H), 7.81 (dd, $J = 9.2, 2.0$ Hz, 1 H), 7.09 (t, $J = 2.3$ Hz, 1 H), 6.98 (m, 3 H), 3.91 (m, 1 H), 3.81 (m, 1 H), 3.53 (s, 2 H), 1.82 (m, 6 H), 1.69 (m, 2 H).

Example 365

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-((4-methylpyrimidin-2-yl)thio)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 2-(carboxymethylthio)-4-pyrimidine for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 442 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, $J = 6.9$

Hz, 1 H), 8.72 (d, $J = 9.0$ Hz, 1 H), 8.54 (d, $J = 7.2$ Hz, 1 H), 8.47 (d, $J = 5.0$ Hz, 1 H), 8.05 (d, $J = 6.2$ Hz, 1 H), 7.94 (d, $J = 2.2$ Hz, 1 H), 7.80 (dd, $J = 9.0, 2.2$ Hz, 1 H), 7.10 (d, $J = 5.3$ Hz, 1 H), 6.98 (d, $J = 7.5$ Hz, 1 H), 3.91 (m, 3 H), 3.84 (m, 1 H), 2.40 (s, 3 H), 1.83 (m, 6 H), 1.68 (m, 2 H).

Example 366

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-3'-hydroxy-1,1'-biphenyl-3-carboxamide

The titled compound was prepared according to the method described in Example 350 by substituting 3- (4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)phenol for 5-acetyl-2-thiophene boronic acid. MS ESI(+)Q1MS m/z 490 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 9.80 (s, 1H), 8.85 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.27 (d, 1H), 7.98 (d, 1H), 7.89 (m, 1 H), 7.78 (dd, 1H), 7.63 (d, 1 H), 7.55 (d, 1H), 7.38 (dd, 1H), 7.23 (t, 1H), 6.69-7.01 (m, 2H), 6.92 (t, 1H), 3.99-4.04 (m, 2H), 1.96-2.05 (m, 4H), 1.74-1.83 (m, 4H).

Example 367

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-3'-(hydroxymethyl)-1,1'-biphenyl-3-carboxamide

The titled compound was prepared according to the method described in Example 350 by substituting 3- hydroxymethylbenzeneboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+)Q1MS m/z 504 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.86 (d, 1 H), 8.73 (d, 1 H), 8.57 (d, 1 H), 8.37 (d, 1H), 8.01 (s, 1H), 7.98 (d, 1 H), 7.79 (dd, 1H), 7.60-7.74 (m, 4 H), 7.47 (t, 1H), 7.40 (d, 1H), 7.00(d, 1H), 4.60 (s, 2H), 4.97-4.05 (m, 3H), 1.98-2.07 (m, 4H), 1.75-1.84 (m, 4H).

Example 368

3-(2-chlorophenyl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}propanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-(2-chlorophenyl)propionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 442 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, $J = 6.9$ Hz, 1 H), 8.72 (d, $J = 9.0$ Hz, 1 H), 8.54 (d, $J = 7.2$ Hz, 1 H), 7.93 (d, $J = 2.2$ Hz, 1 H), 7.78 (m, 2 H), 7.41 (dd, $J = 7.6, 1.4$ Hz, 1 H), 7.33 (dd, $J = 7.5, 1.9$ Hz, 1 H), 7.25 (m, 2 H), 6.96 (d, $J = 7.2$ Hz, 1 H), 3.89 (m, 1 H), 3.81 (m, 1 H), 2.94 (m, 2 H), 2.46 (t, $J = 7.6$ Hz, 2 H), 1.80 (m, 6 H), 1.65 (m, 2 H).

Example 369N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-4'-hydroxy-1,1'-biphenyl-3-carboxamide

The titled compound was prepared according to the method described in Example 350 by substituting 4- (4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)phenol for 5-acetyl-2-thiophene boronic acid. MS ESI(+)Q1MS m/z 490 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 9.72 (s, 1H), 8.84 (d, 1 H), 8.73 (d, 1 H), 8.57 (d, 1 H), 8.31 (d, 1H), 7.96 (d, 1H), 7.93 (m, 1 H), 7.80 (dd, 1H), 7.57-7.62 (m, 4 H), 7.00 (d, 1H), 6.89 (d, 2H), (m, 2H), 1.96-2.06 (m, 4H), 1.74-1.84 (m, 4H).

Example 370N-(5-bromopyridin-3-yl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 3,5-dibromopyridine for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 431 and 433 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.64-1.93 (m, 8 H) 3.60 (m, 1 H) 3.98 (m, 1 H) 7.01 (d, J=7.49 Hz, 1 H) 7.19 (t, J=2.34 Hz, 1 H) 7.81 (m, 2 H) 7.92 (d, J=2.18 Hz, 1 H) 8.03 (d, J=2.50 Hz, 1 H) 8.55 (d, J=7.18 Hz, 1 H) 8.71 (d, J=9.36 Hz, 1 H) 8.89 (d, J=7.49 Hz, 1 H).

Example 371N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-indole-4-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting indole-4-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 419 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.92 (m, 8 H) 4.00 (m, 1 H) 4.11 (m, 1 H) 6.82 (d, J=2.18 Hz, 1 H) 7.01 (d, J=7.49 Hz, 1 H) 7.15 (m, 1 H) 7.45 (m, 2 H) 7.55 (d, J=8.11 Hz, 1 H) 7.80 (m, 2 H) 7.94 (d, J=2.18 Hz, 1 H) 8.56 (d, J=7.17 Hz, 1 H) 8.71 (d, J=9.05 Hz, 1 H) 8.84 (d, J=7.17 Hz, 1 H).

Example 372N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}hexanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting hexanoic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 374 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, J = 6.9 Hz, 1 H), 8.73 (d, J = 9.4 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.95 (d, J = 2.2 Hz, 1 H), 7.79 (dd, J = 9.0, 2.2 Hz, 1 H), 7.66 (d, J = 6.2 Hz, 1 H), 6.97 (d, J = 7.2 Hz, 1 H), 3.91 (m, 1 H), 3.80 (m, 1 H), 2.12 (t, J = 7.3 Hz, 2 H), 1.81 (m, 6 H), 1.65 (m, 2 H), 1.51 (m, 2 H), 1.27 (m, 4 H), 0.86 (t, J = 7.0 Hz, 3 H).

Example 373N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cyclopentanecarboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting cyclopentanecarboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 372 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, J = 7.2 Hz, 1 H), 8.72 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 1.9 Hz, 1 H), 7.80 (dd, J = 9.0, 2.2 Hz, 1 H), 7.60 (d, J = 5.9 Hz, 1 H), 6.97 (d, J = 7.5 Hz, 1 H), 3.91 (m, 1 H), 3.77 (m, 1 H), 2.66 (m, 1 H), 1.84 (m, 3 H), 1.76 (m, 3 H), 1.64 (m, 4 H), 1.50 (m, 1 H).

Example 374N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-methoxyphenoxy)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-methoxyphenoxyacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 440 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (d, J = 7.2 Hz, 1 H), 8.71 (d, J = 9.0 Hz, 1 H), 8.56 (d, J = 6.9 Hz, 1 H), 7.94 (d, J = 2.2 Hz, 1 H), 7.80 (m, 2 H), 7.19 (m, 1 H), 6.98 (d, J = 7.2 Hz, 1 H), 6.56 (m, 1 H), 6.54 (m, 2 H), 4.51 (s, 2 H), 3.96 (m, 1 H), 3.91 (m, 1 H), 3.73 (s, 3 H), 1.83 (m, 6 H), 1.70 (m, 2 H).

Example 375N-1-~{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N-2-~((4-methylphenyl)sulfonyl)glycinamide

The titled compound was prepared according to the procedure described in Example 344 by substituting N-p-tosylglycine for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 487 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, J = 6.9 Hz, 1 H), 8.72 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 1.9 Hz, 1 H), 7.80 (m, 2 H), 7.68 (m, 3 H), 7.38 (d, J = 7.8 Hz, 2 H), 6.96 (d, J = 7.5 Hz, 1 H), 3.88 (m, 1 H), 3.73 (m, 1 H), 2.37 (s, 3 H), 1.76 (m, 6 H), 1.63 (m, 2 H).

Example 376N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}quinoxaline-2-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting quinoxaline-2-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+)) Q1MS m/z 432 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.82-2.13 (m, 8 H) 4.07 (m, 1 H) 4.19 (m, 1 H) 7.03 (d, J = 7.49 Hz, 1 H) 7.81 (dd, J = 9.05, 2.18 Hz, 1 H) 7.96 (d, J = 2.18 Hz, 1 H) 8.01 (m, 2 H) 8.23 (m, 2 H) 8.55 (d, J = 6.86 Hz, 1 H) 8.58 (d, J = 7.18 Hz, 1 H) 8.71 (d, J = 9.05 Hz, 1 H) 8.85 (d, J = 7.17 Hz, 1 H).

Example 377N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-methylphenoxy)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-methylphenoxyacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 424 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (d, J = 6.9 Hz, 1 H), 8.71 (d, J = 9.4 Hz, 1 H), 8.55 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 1 H), 7.81 (dd, J = 9.0, 2.2 Hz, 1 H), 7.77 (d, J = 6.2 Hz, 1 H), 7.18 (t, J = 7.8 Hz, 1 H), 6.98 (d, J = 7.2 Hz, 1 H), 6.78 (m, 3 H), 4.50 (s, 2 H), 3.93 (m, 2 H), 2.27 (s, 3 H), 1.84 (m, 6 H), 1.70 (m, 2 H).

Example 378N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyclopentylacetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting cyclopentylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 386 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, J = 7.2 Hz, 1 H), 8.74 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.95 (d, J = 1.9 Hz, 1 H), 7.79 (dd, J = 9.0, 2.2 Hz, 1 H), 7.66 (d, J = 6.2 Hz, 1 H), 6.97 (d, J = 7.2 Hz, 1 H), 3.89 (m, 1 H), 3.81 (m, 1 H), 2.13 (m, 3 H), 1.68 (m, 14 H), 1.15 (m, 2 H).

Example 379(2S)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-phenylbutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting (S)-(+)-2-phenylbutyric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 422 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, J = 6.9 Hz, 1 H), 8.73 (d, J = 9.4 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 2 H), 7.79 (dd, J = 9.0, 2.2 Hz, 1 H), 7.35 (d, J = 7.2 Hz, 2 H), 7.29 (t, J = 7.6 Hz, 2 H), 7.20 (t, J = 7.3 Hz, 1 H), 6.96 (d, J = 7.5 Hz, 1 H), 3.88 (m, 1 H), 3.79 (m, 1 H), 3.48 (dd, J = 9.0, 6.2 Hz, 2 H), 1.79 (m, 9 H), 0.84 (t, J = 7.3 Hz, 3 H).

Example 380N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methylcyclohexanecarboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 2-methyl-1-cyclohexanecarboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 400 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, J = 7.2 Hz, 1 H), 8.73 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.95 (d, J = 2.2 Hz, 1 H), 7.79 (dd, J = 9.0, 2.2 Hz, 1 H), 7.47 (d, J = 5.9 Hz, 1 H), 6.97 (d, J = 7.5 Hz, 1 H), 3.89 (m, 1 H), 3.81 (m, 1 H), 2.41 (m, 1 H), 2.02 (m, 1 H), 1.72 (m, 11 H), 1.39 (m, 4 H), 1.23 (m, 1 H), 0.85 (d, J = 7.2 Hz, 3 H).

Example 381N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-phenylpentanediamide

The titled compound was prepared according to the procedure described in Example 344 by substituting glutaranilic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 465 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 9.86 (s, 1 H), 8.84 (d, J = 7.2 Hz, 1 H), 8.71 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 1 H), 7.79 (dd, J = 9.0, 2.2 Hz, 1 H), 7.71 (d, J = 5.9 Hz, 1 H), 7.59 (d, J = 7.5 Hz, 2 H), 7.27 (t, J = 8.0 Hz, 2 H), 7.01 (t, J = 7.5 Hz, 1 H), 6.97 (d, J = 7.5 Hz, 1 H), 3.90 (m, 1 H), 3.80 (m, 1 H), 2.33 (t, J = 7.3 Hz, 2 H), 2.19 (t, J = 7.5 Hz, 2 H), 1.82 (m, 8 H), 1.65 (m, 2 H).

Example 382N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-phenylpropanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting hydrocinnamic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 408 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, J = 6.9 Hz, 1 H), 8.72 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 1 H), 7.79 (dd, J = 9.2, 2.0 Hz, 1 H), 7.72 (d, J = 5.9 Hz, 1 H), 7.27 (t, J = 7.5 Hz, 2 H), 7.21 (d, J = 6.9 Hz, 2 H), 7.17 (t, J = 7.2 Hz, 1 H), 6.96 (d, J = 7.2 Hz, 1 H), 3.90 (m, 1 H), 3.81 (m, 1 H), 2.83 (t, J = 7.8 Hz, 2 H), 2.44 (t, J = 7.8 Hz, 2 H), 1.79 (m, 6 H), 1.64 (m, 2 H).

Example 3833-(4-chlorophenyl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}propanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-(4-chlorophenyl)propionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 442 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, J = 6.9 Hz, 1 H), 8.72 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 1 H), 7.80 (dd, J = 9.0, 2.2 Hz, 1 H), 7.72 (d, J = 5.9 Hz, 1 H), 7.32 (d, J = 8.4 Hz, 2 H), 7.24 (d, J = 8.4 Hz, 2 H), 6.96 (d, J = 7.2 Hz, 1 H), 3.89 (m, 1 H), 3.79 (m, 1 H), 2.83 (t, J = 7.6 Hz, 2 H), 2.43 (t, J = 7.6 Hz, 2 H), 1.77 (m, 6 H), 1.64 (m, 2 H).

Example 3844'-amino-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide

The titled compound was prepared according to the method described in Example 350 by substituting 4-(4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)aniline for 5-acetyl-2-thiophene boronic acid. MS ESI(+)Q1MS m/z 489 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ

ppm 8.85 (d, 1 H), 8.74 (d, 1 H), 8.57 (d, 1 H), 8.32 (d, 1H), 7.97 (d, 1H), 7.94 (m, 1 H), 7.79 (dd, 1H), 7.57-7.63 (m, 4 H), 7.00 (d, 1H), 6.93 (d, 2H), 4.02(m, 2H), 3.97 (s, 1H), 3.18 (s, 1H), 1.99-2.06 (m, 4H), 1.75-1.85 (m, 4H).

Example 385

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cycloheptanecarboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting cycloheptanecarboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 400 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, J = 6.9 Hz, 1 H), 8.73 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.95 (d, J = 1.9 Hz, 1 H), 7.79 (dd, J = 9.0, 1.9 Hz, 1 H), 7.54 (d, J = 6.2 Hz, 1 H), 6.97 (d, J = 7.5 Hz, 1 H), 3.89 (m, 3 H), 3.76 (m, 1 H), 2.39 (m, 1 H), 1.70 (m, 18 H).

Example 386

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-oxo-4-thien-2-ylbutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-(2-thenoyl)-propionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 442 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, J = 6.9 Hz, 1 H), 8.74 (d, J = 9.4 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.97 (m, 2 H), 7.93 (d, J = 1.9 Hz, 1 H), 7.80 (dd, J = 9.2, 2.0 Hz, 2 H), 7.24 (dd, J = 4.8, 3.9 Hz, 1 H), 6.97 (d, J = 7.2 Hz, 1 H), 3.90 (m, 1 H), 3.79 (m, 1 H), 3.19 (t, J = 6.9 Hz, 2 H), 2.54 (m, 2 H), 1.83 (m, 6 H), 1.65 (m, 2 H).

Example 387

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylcyclohexanecarboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-methyl-1-cyclohexanecarboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 400 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, J = 6.9 Hz, 1 H), 8.72 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.94 (d, J = 2.2 Hz, 1 H), 7.79 (dd, J = 9.2, 2.0 Hz, 1 H), 7.55 (d, J = 6.2 Hz, 1 H), 6.97 (d, J = 7.2 Hz, 1 H), 3.90 (m, 1 H), 3.77 (m, 1 H), 2.25 (m, 1 H), 1.75 (m, 11 H), 1.35 (m, 4 H), 1.03 (m, 1 H), 0.88 (d, J = 6.6 Hz, 3 H).

Example 388

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-4-methoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-hydroxy-4-methoxybenzoic acid for indole-6-carboxylic acid. MS

(ESI(+))Q1MS m/z 426 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.73-2.02 (m, 8 H) 3.77 (s, 3 H) 3.94-4.08 (m, 2 H) 6.44 (d, $J=2.50$ Hz, 1 H) 6.49 (dd, $J=8.89$, 2.34 Hz, 1 H) 6.98 (d, $J=6.86$ Hz, 1 H) 7.79 (dd, $J=9.05$, 2.18 Hz, 1 H) 7.92 (m, 2 H) 8.27 (d, $J=5.62$ Hz, 1 H) 8.55 (d, $J=7.18$ Hz, 1 H) 8.69 (d, $J=9.05$ Hz, 1 H) 8.75 (br. s., 1 H).

Example 389

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cinnoline-4-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting cinnoline-4-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 432 ($M+H$)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.82-2.11 (m, 8 H) 3.98 (m, 1 H) 4.19 (m, 1 H) 7.01 (d, $J=7.49$ Hz, 1 H) 7.79 (dd, $J=9.05$, 2.18 Hz, 1 H) 7.93 (d, $J=2.18$ Hz, 1 H) 7.96-8.05 (m, 2 H) 8.20 (d, $J=8.42$ Hz, 1 H) 8.57 (m, 2 H) 8.69 (d, $J=9.05$ Hz, 1 H) 8.86 (dd, $J=13.73$, 6.55 Hz, 2 H).

Example 390

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylcyclohexanecarboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 4-methyl-1-cyclohexanecarboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 400 ($M+H$)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, $J=7.2$ Hz, 1 H), 8.72 (d, $J=9.0$ Hz, 1 H), 8.54 (d, $J=7.2$ Hz, 1 H), 7.94 (d, $J=1.9$ Hz, 1 H), 7.79 (dd, $J=9.2$, 2.0 Hz, 1 H), 7.48 (d, $J=5.9$ Hz, 1 H), 6.97 (d, $J=7.2$ Hz, 1 H), 3.89 (m, 1 H), 3.78 (m, 1 H), 2.30 (m, 1 H), 1.75 (m, 11 H), 1.42 (m, 6 H), 0.91 (d, $J=6.9$ Hz, 3 H).

Example 391

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(2-methylphenoxy)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting (2-methylphenoxy)acetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 424 ($M+H$)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (d, $J=6.9$ Hz, 1 H), 8.70 (d, $J=9.4$ Hz, 1 H), 8.56 (d, $J=6.9$ Hz, 1 H), 7.93 (d, $J=2.2$ Hz, 1 H), 7.81 (dd, $J=9.0$, 2.2 Hz, 1 H), 7.72 (d, $J=6.6$ Hz, 1 H), 7.16 (m, 2 H), 6.99 (d, $J=7.2$ Hz, 1 H), 6.87 (m, 2 H), 4.54 (s, 2 H), 3.92 (m, 2 H), 2.24 (s, 3 H), 1.83 (m, 6 H), 1.73 (m, 2 H).

Example 392

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylbutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting isovaleric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e

360 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.89 (d, *J* = 6.9 Hz, 1 H), 8.74 (d, *J* = 9.0 Hz, 1 H), 8.54 (d, *J* = 7.2 Hz, 1 H), 7.95 (d, *J* = 2.2 Hz, 1 H), 7.79 (dd, *J* = 9.2, 2.0 Hz, 1 H), 7.67 (d, *J* = 6.2 Hz, 1 H), 6.97 (d, *J* = 7.2 Hz, 1 H), 3.90 (m, 1 H), 3.82 (m, 1 H), 2.01 (m, 3 H), 1.81 (m, 6 H), 1.66 (m, 2 H), 0.89 (d, *J* = 6.6 Hz, 6 H).

Example 393

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cyclohexanecarboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting cyclohexanecarboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) *m/e* 386 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, *J* = 6.9 Hz, 1 H), 8.72 (d, *J* = 9.0 Hz, 1 H), 8.54 (d, *J* = 7.2 Hz, 1 H), 7.94 (d, *J* = 2.2 Hz, 1 H), 7.79 (dd, *J* = 9.2, 2.0 Hz, 1 H), 7.53 (d, *J* = 5.9 Hz, 1 H), 6.97 (d, *J* = 7.2 Hz, 1 H), 3.90 (m, 1 H), 3.77 (m, 1 H), 2.22 (m, 1 H), 1.84 (m, 4 H), 1.70 (m, 9 H), 1.36 (m, 2 H), 1.21 (m, 3 H).

Example 394

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(2,5-dimethoxyphenyl)propanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-(2,5-dimethoxyphenyl)propionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) *m/e* 468 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.84 (d, *J* = 7.2 Hz, 1 H), 8.71 (d, *J* = 9.4 Hz, 1 H), 8.54 (d, *J* = 7.2 Hz, 1 H), 7.93 (d, *J* = 2.2 Hz, 1 H), 7.79 (dd, *J* = 9.0, 1.9 Hz, 1 H), 7.69 (d, *J* = 6.2 Hz, 1 H), 6.96 (d, *J* = 7.5 Hz, 1 H), 6.86 (d, *J* = 8.4 Hz, 1 H), 6.73 (m, 2 H), 3.90 (m, 1 H), 3.81 (m, 1 H), 3.73 (s, 3 H), 3.66 (s, 3 H), 2.76 (t, *J* = 7.8 Hz, 2 H), 2.38 (t, *J* = 7.8 Hz, 2 H), 1.81 (m, 6 H), 1.81 (m, 2 H).

Example 395

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylpentanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-methylpentanoic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) *m/e* 374 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.89 (d, *J* = 7.2 Hz, 1 H), 8.74 (d, *J* = 9.4 Hz, 1 H), 8.54 (d, *J* = 7.2 Hz, 1 H), 7.95 (d, *J* = 1.9 Hz, 1 H), 7.79 (dd, *J* = 9.2, 2.0 Hz, 1 H), 7.69 (d, *J* = 6.2 Hz, 1 H), 6.97 (d, *J* = 7.5 Hz, 1 H), 3.90 (m, 1 H), 3.83 (m, 1 H), 2.12 (m, 1 H), 1.95 (m, 1 H), 1.83 (m, 7 H), 1.66 (m, 2 H), 1.32 (m, 1 H), 1.16 (m, 1 H), 0.86 (m, 6 H).

Example 396N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-6-methoxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-hydroxy-6-methoxycarboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 426 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.72-2.00 (m, 8 H) 3.88 (m, 1 H) 4.00 (s, 3 H) 4.20 (m, 1 H) 6.54 (d, J=8.73 Hz, 1 H) 6.64 (d, J=8.74 Hz, 1 H) 6.94 (m, 1 H) 7.35 (t, J=8.42 Hz, 1 H) 7.75 (m, 1 H) 7.89 (s, 1 H) 8.53 (d, J=7.49 Hz, 1 H) 8.61-8.67 (m, 2 H).

Example 3973'-acetyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide

The titled compound was prepared according to the method described in Example 350 by substituting 3-acetylphenylboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+))Q1MS m/z 516 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.85 (d, 1 H), 8.73 (d, 1 H), 8.57 (d, 1 H), 8.37 (d, 1 H), 8.27 (s, 1 H), 8.01-8.06 (m, 3 H), 7.97 (d, 1 H), 7.78-7.83 (m, 2 H), 7.74 (d, 1 H), 7.68 (t, 1 H), 7.01 (d, 1 H), 4.01-4.05 (m, 2 H), 2.68 (s, 3 H), 1.98-2.07 (m, 4 H), 1.76-1.85 (m, 4 H).

Example 398N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4,4,4-trifluorobutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 4,4,4-trifluorobutyric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 400 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.90 (d, J = 7.2 Hz, 1 H), 8.73 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.95 (d, J = 1.9 Hz, 2 H), 7.79 (dd, J = 9.2, 2.0 Hz, 1 H), 6.98 (d, J = 7.5 Hz, 1 H), 3.90 (m, 1 H), 3.82 (m, 1 H), 2.44 (m, 4 H), 1.84 (m, 6 H), 1.67 (m, 2 H).

Example 3995-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-3-methylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 5-bromo-2-hydroxy-3-methylcarboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 488 and 490 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.74-2.04 (m, 8 H) 2.16 (s, 3 H) 3.97-4.04 (m, 2 H) 6.97 (d, J=7.17 Hz, 1 H) 7.51 (d, J=1.56 Hz, 1 H) 7.79 (dd, J=9.20, 2.03 Hz, 1 H) 7.92 (d, J=1.87 Hz, 1 H) 8.10 (d, J=2.18 Hz, 1 H) 8.55-8.59 (m, 2 H) 8.70 (d, J=9.05 Hz, 2 H).

Example 400N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(phenylsulfonyl)propanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting -3-(phenylsulfonyl)propionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 472 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, J = 7.2 Hz, 1 H), 8.71 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.91 (m, 4 H), 7.78 (m, 2 H), 7.67 (m, 2 H), 6.96 (d, J = 7.2 Hz, 1 H), 3.87 (m, 1 H), 3.71 (m, 1 H), 3.51 (t, J = 7.6 Hz, 4 H), 1.76 (m, 6 H), 1.62 (m, 2 H).

Example 401N-(7-chloroquinolin-4-yl)-N'-(4-methoxy-3,5-dimethylphenyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the methods described in Example 140, substituting 1-bromo-4-methoxy-3,5-dimethylbenzene for 1-bromo-3,5-difluorobenzene. MS (ESI(+))Q1MS m/z 410 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D6) δ ppm 1.72-2.00 (m, 8 H) 2.15 (s, 6 H) 2.18 (s, 3 H) 6.32-6.52 (m, 2 H) 6.99 (d, J=7.46 Hz, 1 H) 7.79-7.95 (m, 3 H) 8.56 (d, J=6.78 Hz, 1 H) 8.72 (d, J=9.16 Hz, 1 H) 8.85 (d, J=9.83 Hz, 1 H).

Example 402N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-phenoxypropanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-phenoxypropionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 424 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.89 (d, J = 6.9 Hz, 1 H), 8.73 (d, J = 9.0 Hz, 1 H), 8.55 (d, J = 7.2 Hz, 1 H), 7.94 (d, J = 2.2 Hz, 1 H), 7.89 (d, J = 5.9 Hz, 1 H), 7.80 (dd, J = 9.0, 2.2 Hz, 1 H), 7.27 (t, J = 8.1 Hz, 2 H), 6.98 (d, J = 7.5 Hz, 1 H), 6.92 (m, 3 H), 4.19 (t, J = 6.2 Hz, 2 H), 3.91 (m, 1 H), 3.84 (m, 1 H), 2.61 (t, J = 6.2 Hz, 2 H), 1.84 (m, 6 H), 1.68 (m, 2 H).

Example 403N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-thien-2-ylbutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 4-(2-thienyl)butyric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 428 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, J = 7.2 Hz, 1 H), 8.72 (d, J = 9.4 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 1 H), 7.79 (dd, J = 9.2, 2.0 Hz, 1 H), 7.72 (d, J = 5.9 Hz, 1 H), 7.31 (dd, J = 5.0, 0.9 Hz, 1 H), 6.97 (d, J = 7.5 Hz, 1 H), 6.94 (dd, J = 5.0, 3.4 Hz, 1 H), 6.85 (d, J = 3.4 Hz, 1 H), 3.91 (m, 1 H), 3.80 (m, 1 H), 2.80 (t, J = 7.6 Hz, 2 H), 2.20 (t, J = 7.5 Hz, 2 H), 1.82 (m, 8 H), 1.65 (m, 2 H).

Example 4043-(1,3-benzodioxol-5-yl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide

The titled compound was prepared according to the method described in Example 350 by substituting 3, 4 methylenedioxybenzeneboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+)Q1MS m/z 516 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.72 (d, 1 H), 8.57 (d, 1 H), 8.31 (d, 1H), 7.95 (m, 2H), 7.80 (dd, 1 H), 7.60-7.66 (m, 2H), 7.41 (d, 1 H), 7.29 (dd, 1H), 7.05 (d, 1H), 7.00 (d, 1H), 6.09 (s, 2H), 4.01-4.03 (m, 2H), 1.96-2.06 (m, 4H), 1.75-1.85 (m, 4H).

Example 405N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3,4-dimethylphenoxy)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3,4-dimethylphenoxyacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 438 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (d, J = 7.2 Hz, 1 H), 8.70 (d, J = 9.4 Hz, 1 H), 8.55 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 1 H), 7.81 (dd, J = 9.0, 2.2 Hz, 1 H), 7.74 (d, J = 6.6 Hz, 1 H), 7.04 (d, J = 8.1 Hz, 1 H), 6.98 (d, J = 7.5 Hz, 1 H), 6.78 (m, 1 H), 6.68 (dd, J = 8.3, 2.7 Hz, 1 H), 4.46 (s, 2 H), 3.95 (m, 1 H), 3.91 (m, 1 H), 2.18 (s, 3 H), 2.13 (s, 3 H), 1.86 (m, 6 H), 1.70 (m, 2 H).

Example 4062-(4-chloro-2-methylphenoxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 4-chloro-O-tolylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 458 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.82 (d, J = 6.9 Hz, 1 H), 8.71 (d, J = 9.4 Hz, 1 H), 8.55 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 1.9 Hz, 1 H), 7.81 (dd, J = 9.0, 2.2 Hz, 1 H), 7.78 (d, J = 6.6 Hz, 1 H), 7.24 (d, J = 2.2 Hz, 1 H), 7.19 (dd, J = 8.7, 2.5 Hz, 1 H), 6.98 (d, J = 7.2 Hz, 1 H), 6.87 (d, J = 8.7 Hz, 1 H), 4.56 (s, 2 H), 3.91 (m, 2 H), 2.22 (s, 3 H), 1.84 (m, 6 H), 1.71 (m, 2 H).

Example 407N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2'-hydroxy-1,1'-biphenyl-3-carboxamide

The titled compound was prepared according to the method described in Example 350 by substituting 2- (4,4,5,5-Tetramethyl-1,3,2-dioxaborolan-2-yl)phenol for 5-acetyl-2-

thiophene boronic acid. MS ESI(+)Q1MS m/z 490 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 9.80 (s, 1H), 8.85 (d, 1 H), 8.72 (d, 1 H), 8.56 (d, 1 H), 8.28 (d, 1H), 7.98 (d, 1H), 7.69 (s, 1H), 7.78 (dd, 1H), 7.63 (d, 1 H), 7.55 (d, 1H), 7.38 (dd, 1H), 7.23 (t, 1H), 7.01-6.99(m, 2H), 6.92 (t, 1H), 3.97-4.04 (m, 2H), 1.96-2.05 (m, 4H), 1.74-1.83 (m, 4H).

Example 408

4'-acetyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide

The titled compound was prepared according to the method described in Example 350 by substituting 4-acetylphenylboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+)Q1MS m/z 516 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.83 (d, 1 H), 8.72 (d, 1 H), 8.57 (d, 1 H), 8.37 (d, 1H), 8.07-8.09 (m, 3H), 7.94-7.96 (m, 3H), 7.79-7.83 (m, 2H), 7.75 (d, 1H) 7.01 (d, 1H), 4.01-4.05 (m, 2H), 2.64 (s, 3H), 1.97-2.06 (m, 4H), 1.76-1.85 (m, 4H).

Example 409

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-6-methylnicotinamide

The titled compound was prepared according to the methods described in Example 23, substituting 6-methylnicotinic acid for indole-6-carboxylic acid. MS (ESI(+)Q1MS m/z 395 ($M+H$)⁺); ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.73-2.02 (m, 8 H) 2.69 (s, 3 H) 3.65-4.08 (br. s., 2 H) 7.00 (d, $J=7.17$ Hz, 1 H) 7.43 (d, $J=8.11$ Hz, 1 H) 7.81 (dd, $J=9.05$, 2.18 Hz, 1 H) 7.94 (d, $J=1.87$ Hz, 1 H) 8.19 (dd, $J=8.11$, 2.18 Hz, 1 H) 8.29 (d, $J=5.62$ Hz, 1 H) 8.56 (d, $J=7.17$ Hz, 1 H) 8.71 (d, $J=9.36$ Hz, 1 H) 8.82 (d, $J=6.86$ Hz, 1 H) 8.95 (d, $J=1.87$ Hz, 1 H).

Example 410

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-phenylbutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 4-phenylbutyric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 422 ($M+H$)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, $J=7.2$ Hz, 1 H), 8.71 (d, $J=9.4$ Hz, 1 H), 8.54 (d, $J=7.2$ Hz, 1 H), 7.93 (d, $J=2.2$ Hz, 1 H), 7.79 (dd, $J=9.0$, 2.2 Hz, 1 H), 7.69 (d, $J=6.2$ Hz, 1 H), 7.28 (t, $J=7.5$ Hz, 2 H), 7.18 (m, 3 H), 6.97 (d, $J=7.2$ Hz, 1 H), 3.90 (m, 1 H), 3.81 (m, 1 H), 2.58 (t, $J=7.8$ Hz, 2 H), 2.15 (t, $J=7.5$ Hz, 2 H), 1.81 (m, 8 H), 1.65 (m, 2 H).

Example 411N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(4-methoxyphenyl)propanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-(4-methoxyphenyl)propionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 438 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, J = 6.9 Hz, 1 H), 8.72 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 6.9 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 1 H), 7.79 (dd, J = 9.0, 1.9 Hz, 1 H), 7.69 (d, J = 5.9 Hz, 1 H), 7.12 (d, J = 8.7 Hz, 2 H), 6.96 (d, J = 7.2 Hz, 1 H), 6.83 (d, J = 8.7 Hz, 2 H), 3.88 (m, 1 H), 3.80 (m, 1 H), 3.69 (s, 3 H), 2.76 (t, J = 7.6 Hz, 2 H), 2.39 (t, J = 7.8 Hz, 2 H), 1.79 (m, 6 H), 1.64 (m, 2 H).

Example 412N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-pyridin-4-ylbenzamide

The titled compound was prepared according to the method described in Example 350 by substituting 4-pyridylboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+)Q1MS m/z 475 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.86 (m, 3H), 8.74 (d, 1 H), 8.57 (d, 1 H), 8.42 (d, 1H), 8.18 (s, 1H), 8.05 (d, 2H), 7.95-7.97 (m, 2H), 7.85 (d, 1 H), 7.80 (dd, 1H), 7.00 (d, 1H), 4.01-4.06 (m, 2H), 1.96-2.06 (m, 4H), 1.76-1.85 (m, 4H).

Example 413N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}heptanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting heptanoic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 452 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, J = 6.9 Hz, 1 H), 8.75 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.95 (d, J = 1.9 Hz, 1 H), 7.79 (dd, J = 9.0, 1.9 Hz, 1 H), 7.59 (d, J = 6.6 Hz, 1 H), 6.96 (d, J = 7.5 Hz, 1 H), 3.89 (m, 1 H), 3.83 (m, 1 H), 1.90 (m, 6 H), 1.78 (m, 4 H), 1.65 (m, 5 H), 1.59 (m, 10 H).

Example 414N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(4-methoxyphenyl)-4-oxobutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-(4-methoxybenzoyl)propionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 466 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.89 (d, J = 6.9 Hz, 1 H), 8.74 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.95 (m, 3 H), 7.79 (m, 2 H), 7.04 (d, J = 9.0 Hz, 2 H), 6.97 (d, J = 7.5 Hz, 1 H), 3.90 (m, 1 H), 3.84 (s, 3 H), 3.79 (m, 1 H), 3.19 (t, J = 6.7 Hz, 2 H), 2.54 (m, 2 H), 1.85 (m, 6 H), 1.66 (m, 2 H).

Example 4152-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}nicotinamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-chloronicotinic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 415 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.75-1.99 (m, 8 H) 3.93 (m, 1 H) 4.03 (m, 1 H) 6.99 (d, J=7.49 Hz, 1 H) 7.50 (dd, J=7.49, 4.99 Hz, 1 H) 7.79 (dd, J=9.05, 2.18 Hz, 1 H) 7.88 (dd, J=7.33, 1.72 Hz, 1 H) 7.92 (d, J=2.18 Hz, 1 H) 8.47 (dd, J=4.84, 2.03 Hz, 1 H) 8.54 (t, J=7.18 Hz, 2 H) 8.73 (d, J=9.05 Hz, 1 H) 8.84 (d, J=7.17 Hz, 1 H).

Example 416N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(3-methoxyphenyl)propanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-(3-methoxyphenyl)propionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 438 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, J = 7.2 Hz, 1 H), 8.71 (d, J = 9.0 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 1 H), 7.79 (dd, J = 9.0, 2.2 Hz, 1 H), 7.72 (d, J = 5.9 Hz, 1 H), 7.18 (t, J = 8.1 Hz, 1 H), 6.97 (d, J = 7.5 Hz, 1 H), 6.78 (m, 2 H), 6.73 (m, 1 H), 3.89 (m, 1 H), 3.81 (m, 1 H), 3.72 (s, 3 H), 2.80 (t, J = 7.8 Hz, 2 H), 2.43 (t, J = 7.8 Hz, 2 H), 1.80 (m, 6 H), 1.65 (m, 2 H).

Example 4172-(benzyloxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting benzyloxyacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 424 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, J = 7.2 Hz, 1 H), 8.68 (d, J = 9.4 Hz, 1 H), 8.55 (d, J = 7.2 Hz, 1 H), 7.93 (d, J = 2.2 Hz, 1 H), 7.80 (dd, J = 9.0, 2.2 Hz, 1 H), 7.41 (d, J = 6.9 Hz, 1 H), 7.38 (d, J = 4.4 Hz, 3 H), 7.32 (m, 1 H), 6.98 (d, J = 7.2 Hz, 1 H), 4.58 (s, 2 H), 3.94 (m, 4 H), 1.82 (m, 6 H), 1.69 (m, 2 H).

Example 418N-(7-chloroquinolin-4-yl)-N'-(5-methyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine

To a solution of phenyl boronic acid (6.10 mg, 0.050 mmol), Pd(PPh₃)₂Cl₂ (~1 mol %), and cesium carbonate (19.5 mg, 0.060 mmol) in dimethoxyethane/water/ethanol (7/3/2) was added N-(3-bromo-5-methylphenyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine (20 mg, 0.050 mmol). The solution was heated in the microwave at 160 °C for 3 minutes, concentrated, and purified by high throughput HPLC to provide the desired compound as its trifluoroacetic acid salt. MS (ESI(+))Q1MS m/z 442 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ

ppm MS (ESI(+))Q1MS m/z 443 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.92 (d, 1 H), 8.76 (d, 2 H), 8.73 (d, 1 H), 8.56 (d, 1H), 7.92-7.96 (m, 4H), 7.81 (dd, 1 H), 7.02 (d, 1H), 6.89 (m, 2 H), 6.67 (s, 1H), 3.89 (m, 2H), 2.30 (s, 3H), 1.78-1.96 (m, 8H).

Example 419

6-(2-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1,3-thiazol-4-yl)-3,4-dihydroquinolin-2(1H)-one

To a solution of phenyl boronic acid (6.10 mg, 0.050 mmol), Pd(PPh₃)₂Cl₂ (~1 mol %), and cesium carbonate (19.5 mg, 0.060 mmol) in dimethoxyethane/water/ethanol (7/3/2) was added N-(3-bromo-5-methylphenyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine (20 mg, 0.050 mmol). The solution was heated in the microwave at 160 °C for 3 minutes, concentrated, and purified by high throughput HPLC to provide the desired compound as its trifluoroacetic acid salt. MS (ESI(+))Q1MS m/z 442 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.91 (m, 1 H), 8.69 (m, 1 H), 8.54 (m, 1 H), 7.95 (m, 2H), 7.71-7.83 (m, 5H), 7.57 (d, 1 H), 7.43 (t, 1H), 6.93-7.02 (m, 2 H), 6.67 (m, 1H), 3.95 (s, 1H), 3.57 (d, 1H), 3.62 (d, 3H), 1.67-2.00 (m, 8H).

Example 419A

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiourea

Ammonium thiocyanate (320 mg, 4.2 mmol) was dissolved in 85 mL dry acetone. A solution of benzoyl chloride (590 mg, 4.2 mmol) in 10 mL dry acetone was added dropwise and heated at reflux for 30 minutes. A solution of 23A *cis*-N,N'-bis(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine (1 g, 3.6 mmol) in 10 mL dry acetone was added dropwise to the refluxing solution. After the addition, the solution was poured into 100 mL of water. The resulting solid was filtered and heated in 30 mL of 10% sodium hydroxide until dissolved. The solution was then allowed to cool and was placed in the freezer overnight. The white solid was filtered and dried under vacuum to give 565 mg, 47 % yield. MS ESI(+))Q1MS m/z 334 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.38-8.42 (m, 2H), 8.78 (d, 1 H), 7.44 (dd, 1 H), 6.66-6.69 (m, 2 H), 6.53 (d, 1H), 4.17 (m, 1H), 3.61 (m, 1H), 1.96-2.06 (m, 4H), 1.65-1.84 (m, 8H).

Example 419B

6-(2-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1,3-thiazol-4-yl)-3,4-dihydroquinolin-2(1H)-one

Example 419A (20 mg, 0.06 mmol) was dissolved in .5 mL ethanol, followed by the addition of 6-(bromoacetyl)-2-oxo-1,2,3,4-tetrahydroquinoline (16.09 mg, 0.06 mmol). After two hours, the solution was concentrated and purified by high throughput HPLC to provide the desired compound as its trifluoroacetic acid salt. MS (ESI(+))Q1MS m/z 504 ($M+H$)⁺; ¹H

NMR (300 MHz, MeOH) δ ppm 10.11 (s, 1 H), 8.94 (d, 1 H), 8.73 (d, 1 H), 8.55 (d, 1 H), 7.96 (d, 1 H), 7.83 (m, 1 H), 7.79 (dd, 1 H), 7.62 (s, 1 H), 7.60 (m, 1 H), 7.01 (d, 1 H), 6.91 (s, 1 H), 6.86 (d, 1 H), 3.97 (m, 1 H), 3.88 (m, 1 H), 2.91 (t, 2 H), 2.47 (t, 2 H), 2.14 (m, 2 H), 1.77-1.97 (m, 6 H).

Example 420

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-5-iodobenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-hydroxy-5-iodobenzoic acid for indole-6-carboxylic acid. MS (ESI(+)) Q1MS m/z 522 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.76-2.02 (m, 8 H) 4.00 (m, 1 H) 4.08 (m, 1 H) 6.79 (d, $J=8.74$ Hz, 1 H) 7.01 (d, $J=7.17$ Hz, 1 H) 7.69 (dd, $J=8.58, 2.34$ Hz, 1 H) 7.80 (dd, $J=9.05, 1.87$ Hz, 1 H) 7.95 (d, $J=2.18$ Hz, 1 H) 8.28 (d, $J=2.18$ Hz, 1 H) 8.57 (m, 2 H) 8.72 (d, $J=9.05$ Hz, 1 H) 8.86 (d, $J=7.18$ Hz, 1 H).

Example 421

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}butanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting butyric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 346 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, $J=7.2$ Hz, 1 H), 8.73 (d, $J=9.0$ Hz, 1 H), 8.54 (d, $J=7.2$ Hz, 1 H), 7.95 (d, $J=2.2$ Hz, 1 H), 7.79 (dd, $J=9.0, 2.2$ Hz, 1 H), 7.66 (d, $J=5.9$ Hz, 1 H), 6.97 (d, $J=7.5$ Hz, 1 H), 3.90 (m, 1 H), 3.80 (m, 1 H), 2.11 (t, $J=7.3$ Hz, 2 H), 1.82 (m, 6 H), 1.65 (m, 2 H), 1.53 (m, 2 H), 0.87 (t, $J=7.5$ Hz, 3 H).

Example 422

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-phenoxyphenyl)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-phenoxyphenylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 486 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.86 (d, $J=6.9$ Hz, 1 H), 8.72 (d, $J=9.0$ Hz, 1 H), 8.55 (d, $J=7.2$ Hz, 1 H), 7.99 (d, $J=5.9$ Hz, 1 H), 7.94 (d, $J=1.9$ Hz, 1 H), 7.80 (dd, $J=9.2, 2.0$ Hz, 1 H), 7.36 (t, $J=8.0$ Hz, 2 H), 7.31 (t, $J=7.8$ Hz, 1 H), 7.09 (t, $J=7.3$ Hz, 1 H), 7.04 (d, $J=7.8$ Hz, 1 H), 6.98 (m, 3 H), 6.94 (m, 1 H), 6.86 (dd, $J=7.8, 1.9$ Hz, 1 H), 3.90 (m, 1 H), 3.79 (m, 1 H), 3.47 (s, 2 H), 1.79 (m, 6 H), 1.66 (m, 2 H).

Example 423

N-(3-bromo-5-methylphenyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine

A dry 250 mL 3-necked flask was charged with Pd₂(dba)₃ (266 mg, 2 mol %),

BINAP, 384 mg, 4 mol%), and sodium t-butoxide (2.2g, 0.023 mol) in 50 mL dry toluene. After 5 minutes, 23A *cis*-N,N'-bis(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine (4.00 g, .0145 mol) was added in one portion followed by dibromotoluene (3.6g, 0.0145 mol). The solution was heated at 70 °C under nitrogen overnight. The contents were filtered, concentrated and the residue was purified by flash chromatography (5% methanol in dichloromethane) to provide 1.03 g, a 16 % yield. MS (ESI(+))Q1MS *m/z* 445 (M+2H)⁺; ¹H NMR (300 MHz, MeOH) δ ppm 8.51 (d, 1 H), 8.37 (d, 1 H), 7.86 (d, 1 H), 7.69 (dd, 1H), 6.96 (d, 1H), 6.66 (s, 1 H), 6.61 (s, 1H), 6.49 (s, 1H), 3.98 (m, 1H), 3.63 (m, 1 H), 2.22 (s, 3H), 1.85-2.01 (m, 8 H).

Example 424

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyclopropylacetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting cyclopropylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) *m/e* 358 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.80 (d, *J* = 7.2 Hz, 1 H), 8.72 (d, *J* = 9.4 Hz, 1 H), 8.54 (d, *J* = 7.2 Hz, 1 H), 7.92 (d, *J* = 2.2 Hz, 1 H), 7.79 (dd, *J* = 9.2, 2.0 Hz, 1 H), 7.57 (d, *J* = 5.9 Hz, 1 H), 6.96 (d, *J* = 7.5 Hz, 1 H), 3.89 (m, 1 H), 3.80 (m, 1 H), 2.04 (d, *J* = 7.2 Hz, 2 H), 1.82 (m, 6 H), 1.66 (m, 2 H), 0.98 (m, 1 H), 0.43 (m, 2 H), 0.14 (m, 2 H).

Example 425

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,2-dimethylpropanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting pivalic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) *m/e* 360 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.80 (d, *J* = 7.2 Hz, 1 H), 8.72 (d, *J* = 9.0 Hz, 1 H), 8.55 (d, *J* = 7.2 Hz, 1 H), 7.96 (d, *J* = 2.2 Hz, 1 H), 7.79 (d, *J* = 10.9 Hz, 1 H), 6.97 (d, *J* = 7.2 Hz, 1 H), 6.89 (d, *J* = 6.2 Hz, 1 H), 3.94 (m, 1 H), 3.79 (m, 1 H), 1.86 (m, 4 H), 1.77 (m, 2 H), 1.63 (m, 2 H), 1.14 (s, 9 H).

Example 426

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-fluoro-6-hydroxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-fluoro-6hydroxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS *m/z* 414 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 1.73-1.98 (m, 8 H) 3.95 (m, 1 H) 4.06 (m, 1 H) 6.71 (m, 2 H) 6.98 (d, *J*=7.49 Hz, 1 H) 7.28 (m, 1 H) 7.78 (dd,

$J=9.05$, 2.18 Hz, 1 H) 7.92 (d, $J=2.18$ Hz, 1 H) 8.08 (m, 1 H) 8.55 (d, $J=6.86$ Hz, 1 H) 8.71 (d, $J=9.05$ Hz, 1 H) 8.82 (d, $J=6.55$ Hz, 1 H).

Example 427

N-(7-chloroquinolin-4-yl)-N'-(3-methyl-5-pyridin-4-ylphenyl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 418 by substituting 4-pyridylboronic acid for phenylboronic acid. MS (ESI(+))Q1MS m/z 443 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.92 (d, 1 H), 8.76 (d, 2 H), 8.73 (d, 1 H), 8.56 (d, 1 H), 7.92-7.96 (m, 4H), 7.81 (dd, 1 H), 7.02 (d, 1H), 6.89 (m, 2 H), 6.67 (s, 1H), 3.89 (m, 2H), 2.30 (s, 3H), 1.78-1.96 (m, 8H).

Example 428

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-oxo-4-phenylbutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 3-benzoylpropionic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 436 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.89 (d, $J=6.9$ Hz, 1 H), 8.74 (d, $J=9.0$ Hz, 1 H), 8.54 (d, $J=7.2$ Hz, 1 H), 7.98 (d, $J=7.2$ Hz, 2 H), 7.94 (d, $J=2.2$ Hz, 1 H), 7.80 (m, 2 H), 7.64 (t, $J=7.3$ Hz, 1 H), 7.53 (t, $J=7.8$ Hz, 2 H), 6.98 (d, $J=7.2$ Hz, 1 H), 3.90 (m, 1 H), 3.80 (m, 1 H), 3.25 (t, $J=6.7$ Hz, 2 H), 2.55 (m, 2 H), 1.85 (m, 6 H), 1.66 (m, 2 H).

Example 429

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-thien-3-ylbenzamide

The titled compound was prepared according to the method described in Example 350 by substituting 3-thiopheneboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+))Q1MS m/z 480 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.85 (d, 1 H), 8.74 (d, 1 H), 8.57 (d, 1 H), 8.31 (d, 1H), 8.08 (m, 1H), 8.06 (s, 1H), 7.98 (d, 1H), 7.76-7.80 (m, 2 H), 7.68-7.17 (m, 2H), 7.62 (d, 1H), 7.01 (d, 1H), 4.01-4.05 (m, 2H), 1.98-2.07 (m, 4H), 1.75-1.85 (m, 4H).

Example 430

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-((E)-2-phenylvinyl)benzamide

The titled compound was prepared according to the method described in Example 350 by substituting trans-2-phenylvinylboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+))Q1MS m/z 500 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.85 (d, 1 H), 8.73 (d, 1 H), 8.57 (d, 1 H), 8.26 (d, 1H), 7.96 (d, 1H), 7.94 (s, 1H), 7.80 (dd, 1H), 7.59-7.68 (m, 4 H),

7.44-7.40 (m, 3H), 7.31-7.34 (m, 2H), 7.01 (d, 1H), 4.01-4.04 (m, 2H), 1.97-2.05 (m, 4H), 1.75-1.84 (m, 4H).

Example 431

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-ethoxyacetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting ethoxyacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 362 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (d, *J* = 7.2 Hz, 1 H), 8.69 (d, *J* = 9.4 Hz, 1 H), 8.55 (d, *J* = 7.2 Hz, 1 H), 7.95 (d, *J* = 2.2 Hz, 1 H), 7.80 (dd, *J* = 9.0, 2.2 Hz, 1 H), 7.32 (d, *J* = 6.9 Hz, 1 H), 6.99 (d, *J* = 7.5 Hz, 1 H), 3.96 (m, 1 H), 3.90 (m, 1 H), 3.87 (s, 2 H), 3.54 (q, *J* = 7.0 Hz, 2 H), 1.81 (m, 6 H), 1.70 (m, 2 H), 1.17 (t, *J* = 6.9 Hz, 3 H).

Example 432

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-ethylbutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 2-ethylbutyric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 374 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.89 (d, *J* = 7.2 Hz, 1 H), 8.75 (d, *J* = 9.0 Hz, 1 H), 8.54 (d, *J* = 7.2 Hz, 1 H), 7.95 (d, *J* = 1.9 Hz, 1 H), 7.79 (dd, *J* = 9.0, 1.9 Hz, 1 H), 7.68 (d, *J* = 6.6 Hz, 1 H), 6.97 (d, *J* = 7.2 Hz, 1 H), 3.88 (m, 2 H), 2.10 (m, 1 H), 1.82 (m, 6 H), 1.67 (m, 2 H), 1.45 (m, 2 H), 1.35 (m, 2 H), 0.82 (t, *J* = 7.3 Hz, 6 H).

Example 433

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-phenylcyclopropanecarboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 1-phenyl-1-cyclopropanecarboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 420 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.68 (m, 2 H), 8.53 (d, *J* = 7.2 Hz, 1 H), 7.92 (d, *J* = 1.9 Hz, 1 H), 7.80 (dd, *J* = 9.0, 2.2 Hz, 1 H), 7.40 (m, 4 H), 7.33 (m, 1 H), 6.93 (d, *J* = 7.2 Hz, 1 H), 6.15 (d, *J* = 6.9 Hz, 1 H), 3.88 (m, 1 H), 3.82 (m, 1 H), 1.73 (m, 4 H), 1.63 (m, 2 H), 1.53 (m, 2 H), 1.37 (dd, *J* = 6.7, 3.9 Hz, 2 H), 1.02 (dd, *J* = 6.7, 3.9 Hz, 2 H).

Example 434

3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-chloro-2-hydroxybenzoic acid for indole-6-carboxylic acid. MS (ESI(+)) Q1MS m/z 430 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.74-2.07 (m, 8 H)

4.01-4.07 (m, 2 H) 6.93 (t, $J=7.96$ Hz, 1 H) 6.98 (d, $J=7.18$ Hz, 1 H) 7.62 (dd, $J=7.96$, 1.40 Hz, 1 H) 7.80 (dd, $J=9.05$, 1.87 Hz, 1 H) 7.93 (d, $J=2.18$ Hz, 1 H) 8.00 (dd, $J=8.11$, 1.25 Hz, 1 H) 8.57 (d, $J=7.18$ Hz, 1 H) 8.66 (d, $J=5.62$ Hz, 1 H) 8.71 (d, $J=9.36$ Hz, 1 H) 8.73 (d, $J=6.55$ Hz, 1 H).

Example 435

N-(7-chloroquinolin-4-yl)-N'-(4',5-dimethyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 418 by substituting 4-methylboronic acid for phenylboronic acid. MS (ESI(+))Q1MS m/z 456 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.92 (d, 1 H), 8.73 (d, 1 H), 8.57 (d, 1H), 7.93 (d, 1H), 7.81 (dd, 1 H), 7.69-7.74 (m, 1H), 7.45 (d, 2H), 7.24 (m, 2H), 7.01 (m, 1H), 6.70 (s, 1H), 6.63 (s, 1H), 6.46 (s, 1H), 3.64 (m, 1H), 3.47 (m, 1H), 2.33 (s, 3H), 2.26 (s, 3H), 1.72-1.99 (m, 8H).

Example 436

N-(7-chloroquinolin-4-yl)-N'-(3',5-dimethyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 418 by substituting 3-methylboronic acid for phenylboronic acid. MS (ESI(+))Q1MS m/z 456 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.92 (d, 1 H), 8.73 (d, 1 H), 8.56 (d, 1H), 7.92 (d, 1H), 7.80 (dd, 1 H), 7.56-7.62 (m, 1H), 7.13-7.38 (m, 3H), 7.14 (d, 1H), 7.02 (d, 1H), 6.72 (s, 1H), 6.64 (s, 1H), 6.48 (s, 1H), 3.96-4.00 (m, 1H), 3.64 (m, 1H), 2.36 (s, 3H), 2.26 (s, 3H), 1.77-1.98 (m, 8H).

Example 437

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-thien-2-ylbenzamide

The titled compound was prepared according to the method described in Example 350 by substituting 2-thiopheneboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+))Q1MS m/z 480 ($M+H$)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.82 (d, 1 H), 8.73 (d, 1 H), 8.57 (d, 1 H), 8.34 (d, 1H), 7.95 (m, 2H), 7.80 (dd, 1H), 7.54-7.73 (m, 4 H), 7.20 (dd, 1H), 7.00 (d, 1H), 4.00-4.03 (m, 2H), 1.97-2.05 (m, 4H), 1.75-1.85 (m, 4H).

Example 438

N-(7-chloroquinolin-4-yl)-N'-(4-(3,4-dihydro-2H-1,5-benzodioxepin-7-yl)-1,3-thiazol-2-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 419 by substituting 3,4-(trimethylenedioxy)phenacyl bromide for 6-(bromoacetyl)-2-oxo-1,2,3,4-

tetrahydroquinoline . MS (ESI(+))Q1MS m/z 507 (M+H)⁺; ¹H NMR (300 MHz, MeOH) δ ppm 8.93 (d, 1 H), 8.72 (d, 1 H), 8.55 (d, 1H), 7.94 (d, 1H), 7.80 (dd, 1 H), 7.68 (br s, 1H), 7.43 (d, 1 H), 7.40 (dd, 1H), 7.01 (d, 1H), 6.95 (t, 2H), 4.13 (m, 4H), 3.97 (m, 1H), 3.89 (m, 1H), 2.09-2.15 (m, 4H), 1.88-1.93 (m, 2H), 1.76-1.82 (m, 4H).

Example 439

N-(7-chloroquinolin-4-yl)-N'-(4-methyl-5-phenyl-1,3-thiazol-2-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 419 by substituting 2-bromopropiophenone for 6-(bromoacetyl)-2-oxo-1,2,3,4-tetrahydroquinoline . MS (ESI(+))Q1MS m/z 449 (M+H)⁺; ¹H NMR (300 MHz, MeOH) δ ppm 8.54 (d, 1 H), 8.40 (d, 1 H), 7.88 (d, 1H), 7.71 (dd, 1H), 7.52 (m, 5 H), 6.98 (d, 1H), 4.03 (m, 1H), 3.92 (m, 1H), 2.32 (s, 3H), 1.95-2.14 (m, 8H).

Example 440

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-(methylsulfonyl)phenyl)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 4-methylsulfonylphenylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 472 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.88 (d, J = 7.2 Hz, 1 H), 8.74 (d, J = 9.4 Hz, 1 H), 8.55 (d, J = 6.9 Hz, 1 H), 8.12 (d, J = 5.9 Hz, 1 H), 7.94 (d, J = 1.9 Hz, 1 H), 7.87 (d, J = 8.1 Hz, 2 H), 7.81 (dd, J = 9.2, 2.0 Hz, 1 H), 7.54 (d, J = 8.4 Hz, 2 H), 6.98 (d, J = 7.2 Hz, 1 H), 3.91 (m, 1 H), 3.81 (m, 1 H), 3.63 (s, 2 H), 3.19 (s, 3 H), 1.83 (m, 6 H), 1.68 (m, 2 H).

Example 441

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-8-hydroxyquinoline-7-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 8hydroxyquinoline-7-carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 447 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 1.81-2.07 (m, 8 H) 4.03 (m, 1 H) 4.18 (m, 1 H) 7.46 (m, 2 H) 7.70 (dd, J=8.42, 4.37 Hz, 1 H) 7.80 (dd, J=9.05, 2.18 Hz, 1 H) 7.94 (d, J=1.87 Hz, 1 H) 8.11 (d, J=8.73 Hz, 1 H) 8.42 (m, 1 H) 8.57 (d, J=7.17 Hz, 1 H) 8.72 (d, J=9.05 Hz, 1 H) 8.76 (d, J=5.93 Hz, 1 H) 8.87 (d, J=7.18 Hz, 1 H) 8.94 (dd, J=4.06, 1.56 Hz, 1 H).

Example 442N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(pyrimidin-2-ylthio)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 2-(carboxymethylthio)pyrimidine for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 428 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, J = 6.9 Hz, 1 H), 8.73 (d, J = 9.0 Hz, 1 H), 8.63 (d, J = 5.0 Hz, 2 H), 8.55 (d, J = 7.2 Hz, 1 H), 8.06 (d, J = 6.2 Hz, 1 H), 7.94 (d, J = 1.9 Hz, 1 H), 7.81 (dd, J = 9.2, 2.0 Hz, 1 H), 7.23 (t, J = 4.8 Hz, 1 H), 6.98 (d, J = 7.5 Hz, 1 H), 3.93 (s, 2 H), 3.83 (m, 2 H), 1.82 (m, 6 H), 1.68 (m, 2 H).

Example 443N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-1-naphthamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-hydroxy-1-naphthoic acid for indole-6-carboxylic acid. MS (ESI(+)) Q1MS m/z 446 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D₆) δ ppm 1.79-2.04 (m, 8 H) 3.95 (m, 1 H) 4.15 (m, 1 H) 6.98 (d, J = 7.17 Hz, 1 H) 7.19 (d, J = 9.05 Hz, 1 H) 7.30 (t, J = 7.49 Hz, 1 H) 7.44 (t, J = 7.64 Hz, 1 H) 7.70 (d, J = 8.42 Hz, 1 H) 7.75 (dd, J = 9.05, 2.18 Hz, 1 H) 7.80 (t, J = 8.27 Hz, 2 H) 7.91 (d, J = 1.87 Hz, 1 H) 8.14 (d, J = 6.55 Hz, 1 H) 8.55 (d, J = 7.18 Hz, 1 H) 8.68 (d, J = 9.36 Hz, 1 H) 8.82 (d, J = 6.55 Hz, 1 H).

Example 444N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,3-dimethylbutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting tert-butylacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 374 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.87 (d, J = 6.9 Hz, 1 H), 8.74 (d, J = 9.4 Hz, 1 H), 8.54 (d, J = 7.2 Hz, 1 H), 7.94 (d, J = 1.9 Hz, 1 H), 7.79 (dd, J = 9.0, 2.2 Hz, 1 H), 7.61 (d, J = 6.2 Hz, 1 H), 6.97 (d, J = 7.2 Hz, 1 H), 3.90 (m, 1 H), 3.83 (m, 1 H), 2.03 (s, 2 H), 1.82 (m, 6 H), 1.66 (m, 2 H), 0.98 (s, 9 H).

Example 445N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}adamantane-1-carboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 1-adamantanecarboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 438 (M)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.79 (d, J = 7.2 Hz, 1 H), 8.71 (d, J = 9.0 Hz, 1 H), 8.55 (d, J = 7.2 Hz, 1 H), 7.94 (d, J = 2.2 Hz, 1 H), 7.80 (dd, J = 9.2, 2.0 Hz, 1 H), 6.97 (d, J = 7.5 Hz, 1 H), 6.77 (d, J = 6.2 Hz, 1 H), 3.94 (m, 1 H), 3.79 (m, 1 H), 1.82 (m, 23 H).

Example 446N-(7-chloroquinolin-4-yl)-N'-(5-phenylpyridin-3-yl)cyclohexane-1,4-diamine

A mixture of example 370 (30 mg, 0.07 mmol), Pd(dppf)Cl₂ (3 mg), sodium methoxide (7.5 mg, 0.14 mmol) and phenylboronic acid (9.7 mg, 0.07 mmol) in 1 ml THF was heated for 15 hours at 65°C, concentrated. Residue was purified with high throughput reverse phase HPLC system to provide the desired compound. MS (ESI(+))Q1MS m/z 429 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D₆) δ ppm 1.75-2.01 (m, 8 H) 3.84 (m, 1 H) 4.04 (m, 1 H) 7.52-7.60 (m, 3 H) 7.74-7.84 (m, 4 H) 7.94 (d, J=2.03 Hz, 1 H) 8.13 (d, J=2.37 Hz, 1 H) 8.33 (s, 1 H) 8.58 (d, J=7.12 Hz, 1 H) 8.73 (d, J=9.15 Hz, 1 H) 8.94 (d, J=6.78 Hz, 1 H).

Example 447(2R)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-4-phenylbutanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting (R)- 2-hydroxy-4-phenylbutyric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 438 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (d, J= 8.4 Hz, 1 H), 8.64 (d, J= 9.0 Hz, 1 H), 8.55 (d, J= 7.2 Hz, 1 H), 7.92 (d, J= 2.2 Hz, 1 H), 7.80 (dd, J= 9.0, 2.2 Hz, 1 H), 7.41 (d, J= 7.8 Hz, 1 H), 7.28 (m, 2 H), 7.18 (m, 2 H), 6.99 (d, J= 7.2 Hz, 1 H), 5.74 (m, 1 H), 3.93 (m, 3 H), 3.93 (m, 2 H), 1.94 (m, 1 H), 1.76 (m, 9 H).

Example 4483'-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-5'-methyl-1,1'-biphenyl-4-ol

The titled compound was prepared according to the method described in Example 418 by substituting 4-hydroxyboronic acid for phenylboronic acid. MS (ESI(+))Q1MS m/z 458 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 9.45 (br s, 1H), 8.92 (d, 1 H), 8.73 (d, 1 H), 8.56 (d, 1H), 7.92 (d, 1H), 7.81 (dd, 1 H), 7.38 (m, 2H), 7.01 (d, 1H), 6.81 (m, 2H), 6.65 (s, 1H), 6.58 (s, 1H), 6.42 (s, 1H), 3.61-3.96 (m, 2H), 2.24 (s, 3H), 1.72-1.99 (m, 8H).

Example 449N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methylpentanamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 2-methylvaleric acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 374 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.85 (d, J= 6.9 Hz, 1 H), 8.73 (d, J= 9.0 Hz, 1 H), 8.54 (d, J= 7.2 Hz, 1 H), 7.93 (d, J= 1.9 Hz, 1 H), 7.80 (dd, J= 9.0, 2.2 Hz, 1 H), 7.62 (d, J= 5.9 Hz, 1 H), 6.97 (d, J= 7.2 Hz, 1 H), 3.90 (m, 1 H), 3.79 (m, 1 H), 2.37 (m, 1 H), 1.81 (m, 6 H), 1.66 (m, 2 H), 1.48 (m, 1 H), 1.23 (m, 3 H), 0.99 (d, J= 6.9 Hz, 3 H), 0.86 (t, J= 7.0 Hz, 3 H).

Example 451N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-methylcyclohexanecarboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 1-methyl-1-cyclohexanecarboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 400 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.78 (d, J = 6.9 Hz, 1 H), 8.72 (d, J = 9.0 Hz, 1 H), 8.55 (d, J = 7.2 Hz, 1 H), 7.95 (d, J = 1.9 Hz, 1 H), 7.80 (dd, J = 9.0, 2.2 Hz, 1 H), 6.97 (d, J = 7.2 Hz, 1 H), 6.91 (d, J = 6.2 Hz, 1 H), 3.94 (m, 1 H), 3.83 (m, 1 H), 1.99 (m, 2 H), 1.86 (m, 4 H), 1.78 (m, 2 H), 1.64 (m, 2 H), 1.32 (m, 8 H), 1.08 (s, 3 H).

Example 452N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-3-isopropylbenzamide

The titled compound was prepared according to the methods described in Example 23, substituting 2-hydroxy-3-isopropylbenzoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 438 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 1.18 (d, J = 6.86 Hz, 6 H) 1.73-2.05 (m, 8 H) 4.02 (m, 2 H) 6.86 (t, J = 7.64 Hz, 1 H) 6.96 (d, J = 7.17 Hz, 1 H) 7.36 (d, J = 7.18 Hz, 1 H) 7.78-7.83 (m, 2 H) 7.92 (d, J = 2.18 Hz, 1 H) 8.42 (d, J = 6.24 Hz, 1 H) 8.64 (m, 1 H) 8.69 (d, J = 9.05 Hz, 1 H).

Example 453N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxy-2-naphthamide

The titled compound was prepared according to the methods described in Example 23, substituting 3-hydroxy-2-naphtoic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 446 (M+H)⁺; ¹H NMR (500 MHz, DMSO-D6) δ ppm 1.81-2.07 (m, 8 H) 4.00 (m, 1 H) 4.15 (m, 1 H) 7.01 (d, J = 7.49 Hz, 1 H) 7.30 (s, 1 H) 7.36 (t, J = 7.64 Hz, 1 H) 7.51 (t, J = 7.49 Hz, 1 H) 7.75 (d, J = 8.73 Hz, 1 H) 7.80 (dd, J = 9.05, 2.18 Hz, 1 H) 7.89 (d, J = 8.42 Hz, 1 H) 7.92 (d, J = 1.87 Hz, 1 H) 8.57 (d, J = 7.17 Hz, 1 H) 8.59 (s, 1 H) 8.70 (d, J = 9.05 Hz, 1 H) 8.78 (m, 2 H).

Example 454N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}tetrahydrofuran-2-carboxamide

The titled compound was prepared according to the procedure described in Example 344 by substituting tetrahydrofuran-2-carboxylic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 374 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.80 (d, J = 7.5 Hz, 1

H), 8.68 (d, $J = 9.0$ Hz, 1 H), 8.55 (d, $J = 7.2$ Hz, 1 H), 7.95 (d, $J = 1.9$ Hz, 1 H), 7.80 (dd, $J = 9.2, 2.0$ Hz, 1 H), 7.32 (d, $J = 7.2$ Hz, 1 H), 6.99 (d, $J = 7.5$ Hz, 1 H), 4.25 (m, 1 H), 3.94 (m, 3 H), 3.81 (m, 1 H), 2.12 (m, 1 H), 1.82 (m, 9 H), 1.68 (m, 2 H).

Example 455

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-methylphenoxy)acetamide

The titled compound was prepared according to the procedure described in Example 344 by substituting 4-methylphenoxyacetic acid for 3-methyl-2-phenyl-pentanoic acid. MS (CI (+)) m/e 424 (M+H)⁺. ¹H NMR (500 MHz, DMSO) δ ppm 8.81 (d, $J = 6.9$ Hz, 1 H), 8.71 (d, $J = 9.0$ Hz, 1 H), 8.55 (d, $J = 7.2$ Hz, 1 H), 7.94 (d, $J = 2.2$ Hz, 1 H), 7.81 (dd, $J = 9.0, 2.2$ Hz, 1 H), 7.76 (d, $J = 6.6$ Hz, 1 H), 7.10 (d, $J = 8.4$ Hz, 2 H), 6.98 (d, $J = 7.5$ Hz, 1 H), 6.86 (d, $J = 8.7$ Hz, 2 H), 4.48 (s, 2 H), 3.95 (m, 1 H), 3.90 (m, 1 H), 2.22 (s, 3 H), 1.83 (m, 6 H), 1.69 (m, 2 H).

Example 456

N-(7-chloroquinolin-4-yl)-N'-(4-(4-methoxyphenyl)-1,3-thiazol-2-yl)cyclohexane-1,4-diamine

The titled compound was prepared according to the method described in Example 419 by substituting 2-bromo-4'-methoxyacetophenone for 6-(bromoacetyl)-2-oxo-1,2,3,4-tetrahydroquinoline. MS (ESI(+))Q1MS m/z 465 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 8.93 (d, 1 H), 8.72 (d, 1 H), 8.55 (d, 1H), 7.94 (m, 1H), 7.80 (dd, 1 H), 7.72 (s, 1H), 7.76 (m, 2H), 7.01 (d, 1H), 6.95 (d, 2H), 6.89 (s, 1H), 3.97 (m, 1H), 3.88 (m, 1H), 3.78 (s, 3H), 1.77-2.16 (m, 8H).

Example 457

3'-(((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)carbonyl)-5'-fluoro-1,1'-biphenyl-3-carboxylic acid

The titled compound was prepared according to the method described in Example 350 by substituting 3-carboxyphenylboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+))Q1MS m/z 518 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 13.12 (br.s, 1H), 8.84 (d, 1 H), 8.72 (d, 1 H), 8.57 (d, 1 H), 8.39 (d, 1H), 8.27 (m, 1H), 8.00-8.04 (m, 3H), 7.95 (d, 1H), 7.80 (dd, 1 H), 7.72-7.77 (m, 2H), 7.66 (t, 1H), 7.00 (d, 1H), 4.01-4.04 (m, 2H), 1.97-2.06 (m, 4H), 1.76-1.85 (m, 4H).

Example 4583'-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)carbonyl)-5'-fluoro-1,1'-biphenyl-4-carboxylic acid

The titled compound was prepared according to the method described in Example 350 by substituting 4-carboxyphenylboronic acid for 5-acetyl-2-thiophene boronic acid. MS ESI(+)Q1MS m/z 518 (M+H)⁺; ¹H NMR (300 MHz, DMSO) δ ppm 13.07 (br.s, 1H), 8.83 (d, 1 H), 8.72 (d, 1 H), 8.57 (d, 1 H), 8.36 (d, 1H), 8.08(d, 2H), 8.06 (s, 1H), 7.91-7.95 (m, 3H), 7.80 (dd, 2 H), 7.74 (d, 1H), 7.00 (d, 1H), 4.03-4.04 (m, 2H), 1.96-2.06 (m, 4H), 1.76-1.83 (m, 4H).

Example 459N-(7-chloroquinolin-4-yl)-N'-(4,5-dimethyl-1,3-thiazol-2-yl)cyclohexane-1,4-diamine

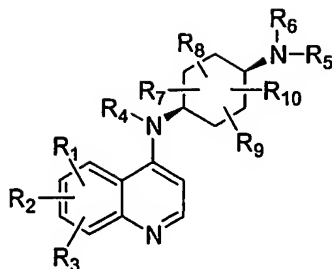
The titled compound was prepared according to the method described in Example 419 by substituting 3-bromo-2-butanone for 6-(bromoacetyl)-2-oxo-1,2,3,4-tetrahydroquinoline . MS (ESI(+))Q1MS m/z 387 (M+H)⁺; ¹H NMR (300 MHz, MeOH) δ ppm 8.53 (d, 1 H), 8.41 (d, 1 H), 7.88 (d, 1H), 7.71 (dd, 1H), 6.98 (d, 1H), 4.04 (m, 1H), 3.84 (m, 1H), 2.22 (s, 3H), 2.20 (s, 3H), 1.92-2.10 (m, 8H).

Example 4607-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-hydroxyquinoline-3-carboxamide

The titled compound was prepared according to the methods described in Example 23, substituting 4-hydroxyquinoline-2carboxylic acid for indole-6-carboxylic acid. MS (ESI(+))Q1MS m/z 481 (M+H)⁺; ¹H NMR (300 MHz, DMSO-D6) δ ppm 1.179-1.97 (m, 8 H) 3.98 (m, 1 H) 4.22 (m, 1 H) 7.05 (d, J=7.46 Hz, 1 H) 7.53 (dd, J=8.81, 2.03 Hz, 1 H) 7.79 (m, 2 H) 7.92 (d, J=2.37 Hz, 1 H) 8.27 (d, J=8.81 Hz, 1 H) 8.56 (d, J=7.12 Hz, 1 H) 8.72 (d, J=9.15 Hz, 1 H) 8.82 (m, 1 H) 9.05 (d, J=8.48 Hz, 1 H) 10.37 (d, J=7.12 Hz, 1 H).

What is claimed is :

1. A compound of formula (I),



(I),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-Y-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of hydrogen, alkyl, aryl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biaryl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, $R_E R_F N$ -, $R_E R_F N C(O)$ -, $R_G S$ - and $R_G O$ -;

R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-;

R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl and heterocycle;

Y is a member selected from the group consisting of $-C(O)$ -, $-S$ -, $-S(O)$ - and $-S(O)_2$ -, or is absent;

R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R_7 , R_8 , R_9 , and R_{10} are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8

taken together with the carbon atom that they are attached form oxo;

with the following provisos P₁-P₄:

P₁ if Y is absent, m is 0 and if A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene,

then B is a member selected from the group consisting of hydrogen, alkyl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, R_ER_FN-, R_ER_FNC(O)-, R_GS- and R_GO-; or

P₂ if Y is -C(O)-, m is 0 and A is absent,

then B is a member selected from the group consisting of hydrogen, alkyl, arylalkenyl, aryloxyalkyl, cycloalkyl, heterocycle, haloalkyl, and R_ER_FNC(O)-; or

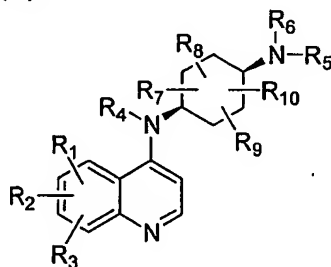
P₃ if Y is -C(O)-, A is absent and B is aryl or heterocycle,

then m is 1-6; or

P₄ if Y is -C(O)- and B is a member selected from the group consisting of arylC(O)-, arylS(O)₂-, heterocycleC(O)-, heterocycleS(O)₂-,

then A is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene.

2. A compound of formula (Ia),



(Ia),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R₁, R₂ and R₃ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and R_AR_BN- wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and R_CR_DNcarbonyl, wherein R_C and R_D are independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R₄ is a member selected from the group consisting of hydrogen and alkyl;

R₅ is B;

B is heterocycle;

R₆ is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R₇, R₈, R₉, and R₁₀ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R₇ and R₈ taken together with the carbon atom that they are attached form oxo.

3. The compound according to claim 2 selected from the group consisting of
- cis*-N-(2,8-bis(trifluoromethyl)quinolin-4-yl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(8-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(7-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(2-methylquinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(2-phenylquinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(6-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(6-methyl-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(6-fluoro-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(8-chloro-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-quinolin-4-ylcyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(5,7-dichloro-2-(trifluoromethyl)quinolin-4-yl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(3,5-difluorophenyl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-phenylcyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(2-fluorophenyl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(3-fluorophenyl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-2-naphthylcyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(3-fluoro-4-methylphenyl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-1-naphthylcyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(3,5-dichlorophenyl)cyclohexane-1,4-diamine;
 - cis*-N-(7-chloroquinolin-4-yl)-N'-(3-methylphenyl)cyclohexane-1,4-diamine;
 - cis*-N-(3,5-bis(trifluoromethyl)phenyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;

cis-N-1,1'-biphenyl-3-yl-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-(trifluoromethyl)phenyl)cyclohexane-1,4-diamine;
cis-4-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-2H-chromen-2-one;
cis-N,N'-bis(7-chloro-4-aminoquinolin-4-yl)cyclohexane-1,4-diamine;
cis-N-1,1'-biphenyl-3-yl-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinazolin-4-yl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-4-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-2H-chromen-2-one;
cis-N-(7-chloroquinolin-4-yl)-N'-pyridin-2-ylcyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-isoquinolin-4-ylcyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-quinolin-3-ylcyclohexane-1,4-diamine;
(1*S*,2*R*,4*S*,5*R*)-*N,N*-bis(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamine;
(1*S*,2*R*,4*S*,5*R*)-*N*-(7-chloroquinolin-4-yl)-*N'*-(3,5-dimethylphenyl)-2,5-dimethylcyclohexane-1,4-diamine;
N-((1*S*,2*R*,4*S*,5*R*)-4-((7-chloroquinolin-4-yl)amino)-2,5-dimethylcyclohexyl)-3,5-difluorobenzamide;
5-bromo-*N*-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;
(1*S*,2*R*,4*S*,5*R*)-*N,N'*-bis(7-chloroquinolin-4-yl)-2,5-dimethylcyclohexane-1,4-diamine;
4-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-6-methyl-2H-chromen-2-one;
N-(7-chloroquinolin-4-yl)-*N'*-(2',5-dimethyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine;
N-(5-bromopyridin-3-yl)-*N'*-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
N-(7-chloroquinolin-4-yl)-*N'*-(4-methoxy-3,5-dimethylphenyl)cyclohexane-1,4-diamine;
N-(7-chloroquinolin-4-yl)-*N'*-(5-methyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine;
6-(2-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1,3-thiazol-4-yl)-3,4-dihydroquinolin-2(1*H*)-one;
N-(3-bromo-5-methylphenyl)-*N'*-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
N-(7-chloroquinolin-4-yl)-*N'*-(3-methyl-5-pyridin-4-ylphenyl)cyclohexane-1,4-diamine;
N-(7-chloroquinolin-4-yl)-*N'*-(4',5-dimethyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine;
N-(7-chloroquinolin-4-yl)-*N'*-(3',5-dimethyl-1,1'-biphenyl-3-yl)cyclohexane-1,4-diamine;
N-(7-chloroquinolin-4-yl)-*N'*-(4-(3,4-dihydro-2*H*-1,5-benzodioxepin-7-yl)-1,3-

thiazol-2-yl)cyclohexane-1,4-diamine;

N-(7-chloroquinolin-4-yl)-N'-(4-methyl-5-phenyl-1,3-thiazol-2-yl)cyclohexane-1,4-diamine;

N-(7-chloroquinolin-4-yl)-N'-(5-phenylpyridin-3-yl)cyclohexane-1,4-diamine;

3'-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-5'-methyl-1,1'-biphenyl-4-ol;

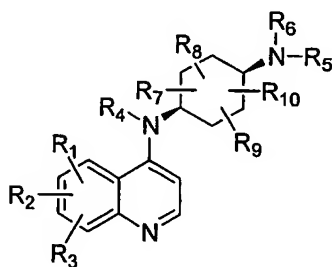
N'-{4-((2-N-methylamino-7-chloroquinolin-4-yl)amino)cyclohexyl}-7-chloro-N-methylquinoline-2,4-diamine;

N-(7-chloroquinolin-4-yl)-N'-(4-(4-methoxyphenyl)-1,3-thiazol-2-yl)cyclohexane-1,4-diamine; and

N-(7-chloroquinolin-4-yl)-N'-(4,5-dimethyl-1,3-thiazol-2-yl)cyclohexane-1,4-diamine.

4. A compound that is
cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-dimethylphenyl)cyclohexane-1,4-diamine.

5. A compound of formula (Ib),



(Ib),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R₁, R₂ and R₃ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and R_AR_BN- wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and R_CR_DNcarbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R₄ is a member selected from the group consisting of hydrogen and alkyl;

R₅ is -A-B;

A is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

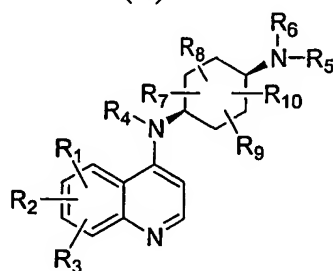
B is heterocycle;

R₆ is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R₇, R₈, R₉, and R₁₀ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R₇ and R₈ taken together with the carbon atom that they are attached form oxo.

6. The compound according to claim 5 selected from the group consisting of
cis-N-(7-chloroquinolin-4-yl)-N'-(quinolin-3-ylmethyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(quinolin-4-ylmethyl)cyclohexane-1,4-diamine;
cis-N-(4-bromobenzyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-{(4-(dimethylamino)-1-naphthyl)methyl}cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(4-pyridin-2-ylbenzyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(1H-indol-6-ylmethyl)cyclohexane-1,4-diamine;
cis-N-(4,4-bis(4-fluorophenyl)butyl)-N'-(7-chloroquinolin-4-yl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(4-phenylbutyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(5-phenylpentyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3,5-difluorobenzyl)cyclohexane-1,4-diamine;
cis-N-(7-chloroquinolin-4-yl)-N'-(3-fluorobenzyl)cyclohexane-1,4-diamine; and
cis-7-chloro-N-4-(4-((3-(trifluoromethyl)benzyl)amino)cyclohexyl)quinoline-2,4-diamine.

7. A compound according to formula (Ic)



(Ic),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R₁, R₂ and R₃ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and R_AR_BN- wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and R_CR_DNcarbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen,

alkyl and aryl;

R₄ is a member selected from the group consisting of hydrogen and alkyl;

R₅ is $-(CH_2)_m-C(O)-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of hydrogen, alkyl, aryl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biaryl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, R_ER_FN-, R_ER_FNC(O)-, R_GS- and R_GO-;

R_E and R_F are each independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-;

R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl and heterocycle;

R₆ is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R₇, R₈, R₉, and R₁₀ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R₇ and R₈ taken together with the carbon atom that they are attached form oxo.

8. The compound according to claim 7, wherein
m is 0; and
A is absent.

9. The compound according to claim 7, wherein
m is 0;
A is absent; and
B is a member selected from the group consisting of aryl, arylalkenyl, aryloxyalkyl, biaryl and heterocycle.

10. The compound according to claim 9 selected from the group consisting of
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-indole-6-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylbenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylbenzamide;
cis-2-amino-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxybenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methoxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methoxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluorobenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzamide;
cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-2-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-3-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-4-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-cyanobenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(dimethylamino)benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-cyanobenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(dimethylamino)benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethyl)benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethyl)benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,3-dimethylbenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-dimethylbenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethoxy)benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethylbenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-dimethylbenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-dimethoxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-dimethoxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dimethoxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-benzodioxole-5-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4,5-trimethoxybenzamide;
cis-2,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-3,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-furamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-furamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethyl-3-furamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-3-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylthiophene-2-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-pyrrole-2-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dimethylbenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methylthiophene-2-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethyl-1H-pyrrole-3-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,2,5-trimethyl-1H-pyrrole-3-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-thiazole-2-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-methyl-1H-pyrrole-2-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-thiazole-4-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-thiazole-5-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}isoxazole-5-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methyl-3-phenylisoxazole-4-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}pyridine-2-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxypyridine-2-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxynicotinamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methylpyrazine-2-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-indole-3-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-8-methyl-4-oxo-4H-pyrido(1,2-a)pyrimidine-3-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methyl-1-phenyl-1H-

pyrazole-4-carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-oxo-4,5,6,7-tetrahydro-1-

benzofuran-3-carboxamide;

cis-6-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2H-chromene-3-

carboxamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-ethylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-4-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxy-4-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-4-methylbenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,3-difluorobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-difluorobenzamide;

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-difluorobenzamide;

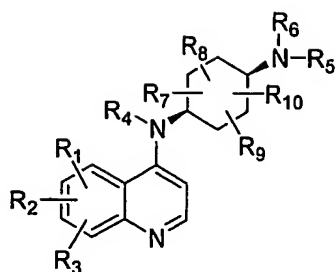
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-difluorobenzamide;

cis-4-acetyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methoxy-4-methylbenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-ethoxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(methylthio)benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-4-methoxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-naphthamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-naphthamide;
cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;
cis-2-(acetylamino)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-4-(acetylamino)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-isopropoxybenzamide;
cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluoro-1-naphthamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-diethoxybenzamide;
cis-2-benzyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(2-phenylethyl)benzamide;
cis-2-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-methoxybenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-methylbenzoyl)benzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-iodobenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-iodobenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-iodobenzamide;
cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}isonicotinamide;
cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-6-methylisonicotinamide;
cis-2,6-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}isonicotinamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-phenoxybutanamide;;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(3-methyl-1H-indol-1-yl)propanamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(1-methyl-1H-benzimidazol-2-yl)propanamide;
cis-1-benzoyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}piperidine-4-carboxamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(4-propoxyphenyl)urea;
cis-N-(5-tert-butyl-2-methoxyphenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;
cis-3,5-difluoro-N-(4-{(6-fluoro-2-(trifluoromethyl)quinolin-4-yl)amino}cyclohexyl)benzamide;

cis-3,5-difluoro-N-(4-((8-(trifluoromethoxy)-2-(trifluoromethyl)quinolin-4-yl)amino)cyclohexyl)benzamide;
cis-N-(4-((5,7-dichloro-2-(trifluoromethyl)quinolin-4-yl)amino)cyclohexyl)-3,5-difluorobenzamide;
cis-3,5-difluoro-N-(4-((6-methyl-2-(trifluoromethyl)quinolin-4-yl)amino)cyclohexyl)benzamide;
cis-N-{4-((2-amino-7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-difluorobenzamide;
cis-N-{4-((2-amino-7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dichlorobenzamide;
cis-N-{4-((2-amino-7-chloroquinolin-4-yl)amino)cyclohexyl}-4-phenoxybutanamide;
3-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-5-methylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,2-diphenylacetamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2-hydroxybenzamide;
N-((1S,2R,4S,5R)-4-((7-chloroquinolin-4-yl)amino)-2,5-dimethylcyclohexyl)-3,5-difluorobenzamide;
3-(5-acetylthien-2-yl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-5-methoxybenzamide;
4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}quinoline-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-3-methylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,6-dimethoxynicotinamide;
3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide;
3'-amino-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-3'-hydroxy-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-3'-(hydroxymethyl)-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-4'-hydroxy-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1H-indole-4-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}quinoxaline-2-carboxamide;
4'-amino-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-4-methoxybenzamide;

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cinnoline-4-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-6-methoxybenzamide;
3'-acetyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide;
5-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-3-methylbenzamide;
3-(1,3-benzodioxol-5-yl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluorobenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2'-hydroxy-1,1'-biphenyl-3-carboxamide;
4'-acetyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-1,1'-biphenyl-3-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-6-methylnicotinamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-pyridin-4-ylbenzamide;
2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}nicotinamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-5-iodobenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-fluoro-6-hydroxybenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-thien-3-ylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-((E)-2-phenylvinyl)benzamide;
3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxybenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluoro-5-thien-2-ylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-8-hydroxyquinoline-7-carboxamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-1-naphthamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-3-isopropylbenzamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-hydroxy-2-naphthamide;
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}tetrahydrofuran-2-carboxamide;
3'-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)carbonyl)-5'-fluoro-1,1'-biphenyl-3-carboxylic acid;
3'-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)carbonyl)-5'-fluoro-1,1'-biphenyl-4-carboxylic acid; and
7-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-hydroxyquinoline-3-carboxamide.

11. A compound of formula (Id),



(Id),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-C(O)-A-B$;

m is 0;

A is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

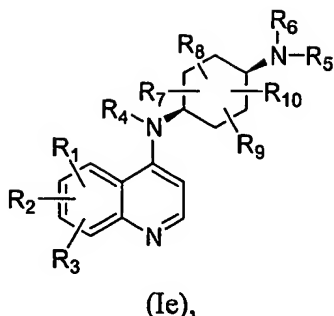
B is a member selected from the group consisting of arylC(O)-, arylNC(O)-, arylS(O)₂-, heterocycleC(O)-, heterocycleNC(O)- and heterocycleS(O)₂-;

R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R_7 , R_8 , R_9 , and R_{10} are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8 taken together with the carbon atom that they are attached form oxo.

12. The compound according to claim 11 selected from the group consisting of
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-oxo-4-thien-2-ylbutanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(phenylsulfonyl)propanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(4-methoxyphenyl)-4-oxobutanamide; and
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-oxo-4-phenylbutanamide.

13. A compound of formula (Ie),



or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-C(O)-A-B$;

m is from 1-6;

A is absent;

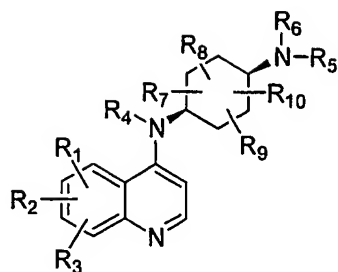
B is a member selected from the group consisting of aryl and heterocycle;

R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R_7 , R_8 , R_9 , and R_{10} are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8 taken together with the carbon atom that they are attached form oxo.

14. The compound according to claim 13 selected from the group consisting of
cis-2-(N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}glycyl)benzaldehyde;
cis-di-3-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1-(4-fluorophenyl)propan-1-one; and
cis-5-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-1-(4-fluorophenyl)pentan-1-one.

15. A compound of formula (If),



(If),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-C(O)-A-B$;

m is 0;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of aryl and heterocycle;

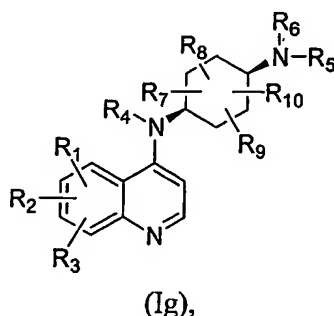
R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R_7 , R_8 , R_9 , and R_{10} are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8 taken together with the carbon atom that they are attached form oxo.

16. The compound according to claim 23 selected from the group consisting of
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-fluorophenyl)acetamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-phenylpentanamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(6-methoxy-3-oxo-2,3-dihydro-1H-inden-1-yl)acetamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-fluorophenyl)acetamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-(trifluoromethyl)phenyl)acetamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-

(trifluoromethyl)phenyl)acetamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methyl-2-phenylpentanamide;
 (2R)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxy-2-phenylacetamide;
 (2S)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxy-2-phenylacetamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3,5-difluorophenyl)acetamide;
 3-(2-chlorophenyl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}propanamide;
 (2S)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-phenylbutanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-phenylpropanamide;
 3-(4-chlorophenyl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}propanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(2,5-dimethoxyphenyl)propanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-thien-2-ylbutanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-phenylbutanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(4-methoxyphenyl)propanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(3-methoxyphenyl)propanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-phenoxyphenyl)acetamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-(methylsulfonyl)phenyl)acetamide; and
 (2R)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-hydroxy-4-phenylbutanamide.

17. A compound of formula (Ig),



or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R₁, R₂ and R₃ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and R_AR_BN- wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and R_CR_DNcarbonyl, wherein

R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R₄ is a member selected from the group consisting of hydrogen and alkyl;

R₅ is $-(CH_2)_mC(O)-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is R_ER_FN-;

R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-;

R₆ is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R₇, R₈, R₉, and R₁₀ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R₇ and R₈ taken together with the carbon atom that they are attached form oxo.

18. The compound according to claim 17 wherein

R_E is a member selected from the group consisting of alkylC(O)-, arylC(O)- and arylS(O)₂-;

m is 0; and

A is alkylene.

19. The compound according to claim 18 selected from the group consisting of *cis*-N²-benzoyl-N¹-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}glycinamide

cis-N¹-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N³-(4-nitrobenzoyl)-β-alaninamide;

cis-N³-benzoyl-N¹-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-β-alaninamide;

N-(2-({4-((7-chloroquinolin-4-yl)amino)cyclohexyl}amino)-2-oxo-1-ethyl)-2-hydroxybenzamide;

N~2~-acetyl-N~1~-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-L-leucinamide; and

N~1~-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N~2~-((4-methylphenyl)sulfonyl)glycinamide.

20. The compound according to claim 17, wherein

B is R_ER_FN-;

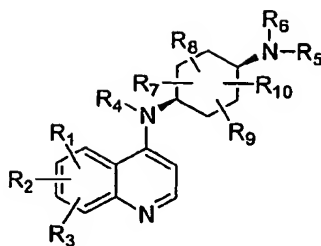
R_E is a member selected from the group consisting of aryl, arylalkyl, heterocycle and heterocyclealkyl;

m is 0; and

A is absent.

21. The compound according to claim 20 selected from the group consisting of
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-(methylthio)phenyl)urea;
cis-N-(2-chlorophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(2-(trifluoromethyl)phenyl)urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-(trifluoromethyl)phenyl)urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(4-(trifluoromethyl)phenyl)urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(4-(trifluoromethoxy)phenyl)urea;
cis-N-1,3-benzodioxol-5-yl-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-((trifluoromethyl)thio)phenyl)urea;
cis-N-(3-bromophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;
cis-N-(4-bromophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3,4-dichlorophenyl)urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(2,4-dichlorophenyl)urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3,5-dichlorophenyl)urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-1-naphthylurea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-2-naphthylurea;
cis-N-benzyl-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;
cis-N-(3-chlorophenyl)-N'-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}urea;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(2-furylmethyl)urea; and
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-(3-furylmethyl)urea.

22. A compound of formula (Ih),



(Ih),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-C(O)-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is $R_E R_F N C(O)-$;

R_E and R_F are independently a member selected from the group consisting of hydrogen, alkyl, alkyl $C(O)-$, aryl, arylalkyl, heterocycle, heterocyclealkyl, aryl $C(O)-$ and aryl $S(O)_2-$;

R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R_7 , R_8 , R_9 , and R_{10} are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8 taken together with the carbon atom that they are attached form oxo.

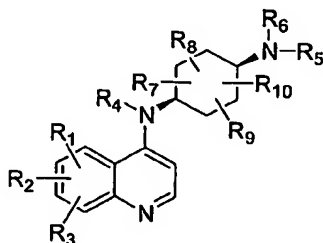
23. The compound according to claim 22, wherein

R_E is a member selected from the group consisting of aryl, arylalkyl, heterocycle and heterocyclealkyl;

m is 0; and

A is alkylene.

24. The compound according to claim 23 that is
N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-N'-phenylpentanediamide.
25. A compound of formula (Ij),



(Ij),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-C(O)-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of $R_G S-$ and $R_G O-$;

R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl, heterocycle and heterocyclealkyl;

R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

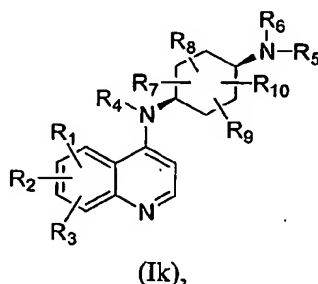
R_7 , R_8 , R_9 , and R_{10} are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8 taken together with the carbon atom that they are attached form oxo.

26. The compound according to claim 25, wherein
 R_G is a member selected from the group consisting of alkyl, aryl, arylalkyl, heterocycle and heterocyclealkyl;
 m is 0; and

A is alkylene.

27. The compound according to claim 26 selected from the group consisting of
- N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-((4-methylpyrimidin-2-yl)thio)acetamide;
 - N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-methoxyphenoxy)acetamide;
 - N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3-methylphenoxy)acetamide;
 - N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(2-methylphenoxy)acetamide;
 - N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-phenoxypropanamide;
 - N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(3,4-dimethylphenoxy)acetamide;
 - 2-(4-chloro-2-methylphenoxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide;
 - 2-(benzyloxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide;
 - N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-ethoxyacetamide;
 - N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(pyrimidin-2-ylthio)acetamide;
- and
- N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(4-methylphenoxy)acetamide.

28. A compound of formula (Ik),



or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-C(O)-A-B$;

m is 0;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of alkyl, cycloalkyl and haloalkyl;

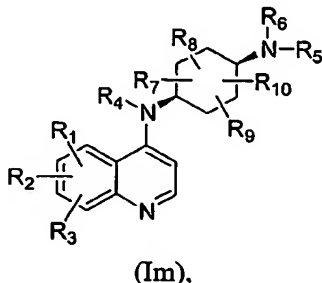
R₆ is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R₇, R₈, R₉, and R₁₀ are independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R₇ and R₈ taken together with the carbon atom that they are attached form oxo.

29. The compound according to claim 28 selected from the group consisting of
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyclohexylacetamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cycloheptylacetamide;
cis-2-((1R,4S)-bicyclo(2.2.1)hept-2-yl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide;
cis-2-(1-adamantyl)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}acetamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylpentanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}pentanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}hexanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cyclopentanecarboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyclopentylacetamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methylcyclohexanecarboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cycloheptanecarboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylcyclohexanecarboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylcyclohexanecarboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylbutanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}cyclohexanecarboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylpentanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4,4,4-trifluorobutanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}heptanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}butanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyclopropylacetamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,2-dimethylpropanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-ethylbutanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-phenylcyclopropanecarboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,3-dimethylbutanamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}adamantane-1-carboxamide;
 N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methylpentanamide; and

N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-methylcyclohexanecarboxamide.

30. A compound of formula (Im),



or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-S(O)_2-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of alkyl, aryl, arylalkenyl, cycloalkyl and heterocycle;

R_6 is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R_7 , R_8 , R_9 , and R_{10} are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R_7 and R_8 taken together with the carbon atom that they are attached form oxo.

31. The compound according to claim 30, wherein

m is 0;

A is absent; and

B is a member selected from the group consisting of aryl and heterocycle.

32. The compound according to claim 31 selected from the group consisting of

cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(trifluoromethoxy)benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-fluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-fluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-cyanobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-cyanobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-cyanobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methoxybenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-methoxybenzenesulfonamide;
cis-2-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-4-(2-chloro-6-nitrophenoxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,4-difluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-difluorobenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-propylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-isopropylbenzenesulfonamide;
cis-4-chloro-N-({5-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonyl}thien-2-yl)methyl)benzamide;
cis-5-bromo-6-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}pyridine-3-sulfonamide;
cis-4-tert-butyl-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-fluorobenzenesulfonamide;
cis-N-{4-((4-((7-chloroquinolin-4-

yl)amino)cyclohexyl} amino)sulfonyl)phenyl} acetamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,5-dimethoxybenzenesulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,4-dimethoxybenzenesulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethyl)benzenesulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethyl)benzenesulfonamide;
 cis-2,3-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} benzenesulfonamide;
 cis-2,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} benzenesulfonamide;
 cis-2,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} benzenesulfonamide;
 cis-3,4-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} benzenesulfonamide;
 cis-3,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} benzenesulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,1'-biphenyl-4-sulfonamide;
 cis-2-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} benzenesulfonamide;
 cis-3-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} benzenesulfonamide;
 cis-4-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} benzenesulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethoxy)benzenesulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-dimethylisoxazole-4-sulfonamide;
 cis-(E)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-phenylethylsulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-vinylbenzenesulfonamide;
 cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl} thiophene-2-sulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,1,3-benzoxadiazole-4-sulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-nitrobenzenesulfonamide;
 cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-nitrobenzenesulfonamide;
 cis-3-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-

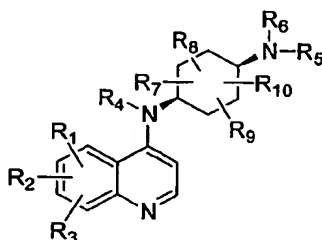
methylbenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}quinoline-8-sulfonamide;
cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1,3-dimethyl-1H-pyrazole-4-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,1,3-benzothiadiazole-4-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methyl-5-nitrobenzenesulfonamide;
cis-methyl 3-(((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonyl)thiophene-2-carboxylate;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(1,1-dimethylpropyl)benzenesulfonamide;
cis-4-butoxy-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-isoxazol-3-ylthiophene-2-sulfonamide;
cis-2,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-3-sulfonamide;
cis-4,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-2-sulfonamide;
cis-7-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2,1,3-benzoxadiazole-4-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(methylsulfonyl)benzenesulfonamide;
cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-nitrobenzenesulfonamide;
cis-6-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3H-1λ⁴-imidazo(2,1-b)(1,3)thiazole-5-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-(trifluoroacetyl)-1,2,3,4-tetrahydroisoquinoline-7-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-fluoro-2-methylbenzenesulfonamide;
cis-4-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-(trifluoromethyl)benzenesulfonamide;
cis-2,4,5-trichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-2,4,6-trichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;

cis-2,3,4-trichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-5-chloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3-methyl-1-benzothiophene-2-sulfonamide;
cis-5-bromo-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxybenzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-nitro-4-(trifluoromethyl)benzenesulfonamide;
cis-N-({5-((4-((7-chloroquinolin-4-yl)amino)cyclohexyl)amino)sulfonyl}thien-2-yl)methylbenzamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-(2-(methylthio)pyrimidin-4-yl)thiophene-2-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-3,5-bis(trifluoromethyl)benzenesulfonamide;
cis-2,6-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-(trifluoromethyl)benzenesulfonamide;
cis-2-butoxy-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-(1,1-dimethylpropyl)benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-5-(phenylsulfonyl)thiophene-2-sulfonamide;
cis-4-(3-chloro-2-cyanophenoxy)-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}benzenesulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-4-ethylbenzenesulfonamide;
cis-4-bromo-2,5-dichloro-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}thiophene-3-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-methoxy-5-methylbenzenesulfonamide; and
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-2-nitrobenzenesulfonamide.

33. The compound according to claim 30 wherein
 m is 0;
 A is alkylene; and
 B is a member selected from the group consisting of aryl and heterocycle.
34. The compound according to claim 33 selected from the group consisting of
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-(3,4-dichlorophenyl)methanesulfonamide; and

cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-(3,5-dichlorophenyl)methanesulfonamide.

35. The compound according to claim 30, wherein
 m is 0;
 A is alkylene; and
 B is a member selected from the group consisting of alkyl and cycloalkyl.
36. The compound according to claim 35 selected from the group consisting of
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}propane-1-sulfonamide;
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}butane-1-sulfonamide; and
cis-N-{4-((7-chloroquinolin-4-yl)amino)cyclohexyl}-1-((1*S*,4*R*)-7,7-dimethyl-2-oxobicyclo(2.2.1)hept-1-yl)methanesulfonamide.
37. A method of treating disorders by inhibiting the effects of melanin concentrating hormone (MCH) through the melanin concentrating hormone receptor, comprising administering a therapeutically effective amount of a compound of formula (II),



(II),

or a therapeutically suitable salts, ester, prodrug or zwitterion thereof, wherein

R_1 , R_2 and R_3 are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy, hydroxy and $R_A R_B N$ - wherein R_A and R_B are each independently a member selected from the group consisting of hydrogen and alkyl, alkylcarbonyl, alkylsulfonyl, arylcarbonyl, arylsulfonyl and $R_C R_D N$ carbonyl, wherein R_C and R_D are each independently a member selected from the group consisting of hydrogen, alkyl and aryl;

R_4 is a member selected from the group consisting of hydrogen and alkyl;

R_5 is $-(CH_2)_m-Y-A-B$;

m is from 0-6;

A is absent or is a member selected from the group consisting of alkoxyalkylene, alkylene and hydroxyalkylene;

B is a member selected from the group consisting of hydrogen, alkyl, aryl, arylC(O)-, arylS(O)₂-, arylalkenyl, aryloxyalkyl, biaryl, biarylalkyl, cycloalkyl, heterocycle, heterocycleC(O)-, heterocycleS(O)₂-, haloalkyl, R_ER_FN-, R_ER_FNC(O)-, R_GS- and R_GO-;

R_E and R_F are each independently a member selected from the group consisting of hydrogen, alkyl, alkylC(O)-, aryl, arylalkyl, heterocycle, heterocyclealkyl, arylC(O)- and arylS(O)₂-;

R_G is a member selected from the group consisting of hydrogen, alkyl, aryl, arylalkyl and heterocycle;

Y is a member selected from the group consisting of -C(O)-, -S-, -S(O)- and -S(O)₂-, or is absent;

R₆ is a member selected from the group consisting of hydrogen, alkyl and arylcarboxyalkyl; and

R₇, R₈, R₉, and R₁₀ are each independently a member selected from the group consisting of hydrogen, alkyl, alkoxy, halo, haloalkyl, haloalkoxy and hydroxy or R₇ and R₈ taken together with the carbon atom that they are attached form oxo.

38. A method of treating obesity by inhibiting the effects of melanin concentrating hormone (MCH) through the melanin concentrating hormone receptor, comprising administering a therapeutically effective amount of a compound of formula (II).

39. A method of treating abnormalities in reproduction and sexual behavior, thyroid hormone secretion, diuresis and water/electrolyte homeostasis, sensory processing, memory, sleeping and arousal, anxiety and depression, seizure and in treatment of neurodegeneration or psychiatric disorders by inhibiting the effects of melanin concentrating hormone (MCH) through the melanin concentrating hormone receptor, comprising administering a therapeutically effective amount of a compound of formula (II).

40. A pharmaceutical composition comprising a therapeutically effective amount of a compound of formula (II) in combination with a pharmaceutically suitable carrier.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/05510

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K31/4706 A61K31/4709 A61P3/04 A61P5/16 A61P25/22
 A61P25/24 C07D215/46 C07D401/12 C07D407/12 C07D409/12
 C07D417/12 C07D413/12 C07D471/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K C07D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

CHEM ABS Data, WPI Data, PAJ, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 18193 A (F. HOFFMANN-LA ROCHE AG, SWITZ.) 22 May 1997 (1997-05-22) claims; examples 69-87,123 ---	1,40
X	WO 95 35287 A (F. HOFFMANN-LA ROCHE AG, SWITZ.) 28 December 1995 (1995-12-28) claims; example 5 ---	1,2,40
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☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

Date of the actual completion of the international search

14 July 2003

Date of mailing of the international search report

29/07/2003

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Authorized officer

Schmid, J-C

INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 03/05510

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 02 06245 A (SYNAPTIC PHARMARCEUTICAL CORP) 24 January 2002 (2002-01-24) the whole document	1-40

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

The present claims relate to prodrugs which are compounds which are transformed in vivo to the parent compounds of formula (I-II). The claims cover all products having this characteristic or property, whereas the application provides support within the meaning of Article 6 PCT and/or disclosure within the meaning of Article 5 PCT for only a very limited number of such products. In the present case, the claims so lack support, and the application so lacks disclosure, that a meaningful search over the whole of the claimed scope is impossible. Independent of the above reasoning, the claims also lack clarity (Article 6 PCT). An attempt is made to define the compounds by reference to a result to be achieved. Again, this lack of clarity in the present case is such as to render a meaningful search over the whole of the claimed scope impossible. Consequently, the search has been carried out for those parts of the claims which appear to be clear, supported and disclosed, namely those parts relating to the compounds of formula I or II.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 03/05510

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
Although claims 37-39 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☒ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US 03/05510

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